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August 18, 2005

BY OVERNIGHT DELIVERY AND E-FILE

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station
Boston, MA 02110

Re: Bay State Gas Company, D.T.E. 05-27

Dear Ms. Cottrell:

Enclosed for filing, on behalf of Bay State Gas Company ("Bay State"), please find Bay State's responses to the following Record Requests:

From the Attorney General:

RR-AG-80	RR-AG-82	RR-AG-83	RR-AG-88 (Revised)
RR-AG-94	RR-AG-95	RR-AG-97	RR-AG-100

From the Department:

RR-DTE-51	RR-DTE-73	RR-DTE-81	RR-DTE-123
RR-DTE-124	RR-DTE-133	RR-DTE-155	RR-DTE-162
RR-DTE-163	RR-DTE-164	RR-DTE-165	RR-DTE-170

From the USWA:

RR-USWA-10	RR-USWA-16	RR-USWA-17	RR-USWA-18
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Please do not hesitate to telephone me with any questions whatsoever.

Very truly yours,

Patricia M. French

cc: Per Ground Rules Memorandum issued June 13, 2005:

Paul E. Osborne, Assistant Director – Rates and Rev. Requirements Div. (1 copy)

A. John Sullivan, Rates and Rev. Requirements Div. (4 copies)

Andreas Thanos, Assistant Director, Gas Division (1 copy)

Alexander Cochis, Assistant Attorney General (4 copies)

Service List (1 electronic copy)

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-AG-080: Attachment AG-21-3 provides a list of refunds to customers for Metscan related issues. The list starts in March of 2002 to the present. How did the Company account for Metscan refunds prior to March of 2002, and what was the dollar amount of refunds prior to that period?

Response: If the Company paid such refunds to customers prior to March of 2002, these refunds would have been expensed. It is assumed that there would not have been a significant number of such refunds prior to 2002, since these costs were related to the removal of the Metscan system and the installation of the Itron meter reading system. The Company has been unable to locate any records regarding the payments of such refunds prior to March 2002.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-AG-082: Provide an explanation on why approximately 99 percent of the Energy Products & Services (EP&S) revenue comes from residential customers, while allocating less than 55 percent of the net benefits of EP&S to the residential class.

Response: Both the revenues and expenses associated with the EP&S is allocated among rate classes using the distribution allocation factor. The reasoning behind the use of this allocation factor is that it is the overall distribution delivery system that enables the existence of EP&S and, therefore, the net benefits of EP&S should be apportioned among the rate classes in a manner consistent with how the various rate classes are allocated the costs associated with operating and maintaining the distribution system.

The suggestion in the question that net revenues be apportioned to residential rates since customers from those rate classes provide almost all of the EP&S net revenues is not an unreasonable suggestion, although it would represent a departure from the reasoning that underlies the rest of the cost allocation study and is inconsistent with past DTE precedent.

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RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-AG-083: In 1998, how much cash did Fleet provide to Bay State, for the sale/leaseback of the Metscan meter reading devices? How was the cash booked? Did customers receive any benefit from the cash payments?

Response: As provided in response to DTE-01-20, the total acquisition cost that Fleet paid to Bay State in 1998 was \$23,104,922.83. This amount paid was equal to the value of the assets as carried on the Company's books. When the cash was received, the Company debited cash and credited the appropriate asset account. These transactions had no impact on rates paid by customers, but customers did benefit indirectly as the cash received was used by Bay State to fund its ongoing operations.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 18, 2005

Responsible: Danny G. Cote, General Manager

REVISED RESPONSE

RR-AG-088: Regarding the 2004 main replacement program:

1. Identify how many segments of main of any type were replaced to include how the company characterizes its segments;
2. How many separate contractors were retained for the 2004 main replacement work.
3. How many work crews were deployed in the field.
4. If it is not possible to identify how many segments of main of any type were replaced to include how the company characterizes its segments, please explain why.

Response: 1. A main segment can vary in length from 10 feet to total length of the street. The 2004 count of main replacement segments of any type are as follows:

*Springfield : 55 segments
*Brockton : 124 segments
*Lawrence : 42 segments

* These are main replacement segments that were started and finished in 2004.

2. At most, 7 contractors were retained for main replacement work in 2004. They were: Universal Construction Inc., New England Utility Constructors Inc., RH White Construction Co Inc., Robert J. Devereaux Corp., PowerShot Utility Construction Services, Midway Utility Contractors, LLC, G.P.L. Construction, Inc.

3. In 2004, BSG deployed the following work crews for replacement:

Springfield : 4 crews
Brockton : 18 crews
Lawrence : 4 crews

4. Please see response to question 1.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 18, 2005

Responsible: Danny G. Cote, Manager

RR-AG-94: Provide a schedule reflecting inspections by the Department, over the last four years, of Bay State's LNG facilities.

Response: Bay State Gas does not have a formal process of tracking Department inspections. Bay State Gas only tracks inspections when recommendations or violation notices are received in writing.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE DTE
D.T.E. 05-27

Date: August 18, 2005

Responsible: Danny G. Cote, Manager

RR-AG-95: Provide for the last twenty (20) years, per year, those miles of main that have been converted to protected coated status from unprotected coated status.

Response: Over the last twenty years, the Company has reduced the miles of unprotected coated steel (UCS) main from 654 miles in 1985 to 106 miles by year-end 2004. This reduction was accomplished in three ways: (1) abandoning the UCS mains, (2) replacing the UCS main with cathodically protected coated steel or high density polyethylene pipe, and (3) adding cathodic protection to the UCS mains.

During this same time period, the Company has increased the miles of cathodically protected coated steel (CPCS) main from 1480 miles in 1985 to 2034 miles by year-end 2004. This increase was accomplished in three ways: (1) installing new CPCS mains, (2) replacing bare steel, cast iron, coated unprotected steel and plastic mains with CPCS mains, and (3) adding cathodic protection to the UCS mains.

In order to provide an accurate response to this question, the Company would have to manually review its corrosion records from 1985 to present and identify those segments of main to which cathodic protection was added. Although the Company's Work Order Management System (WOMS) captures how much coated steel (CS) main was added, replaced and abandoned each year, WOMS does not capture whether the CS main was protected or unprotected. All coated steel main added or replaced since 1971 is cathodically protected. Coated steel main added or replaced before 1971 may also be cathodically protected. Coated steel main that was installed after 1971 that has been abandoned since 1971 was cathodically protected. Coated steel main that was installed prior to 1971 that has been abandoned may have been cathodically protected. The cathodic protection characteristic of each segment of steel pipe is maintained in the Company's corrosion department records.

While we will approximate the miles of main that have been converted to protected coated status from unprotected coated status, calculating the exact number would be a laborious manual effort that would take some time to investigate as our current information systems do not allow this historical data to be readily extracted.

The following is the best estimate of the miles of main that have been converted to protected coated status from unprotected coated status since 1986.

Miles of Mains converted	
1986	5
1987	10
1988	77
1989	26
1990	25
1991	43
1992	28
1993	50
1994	28
1995	43
1996	137
1997	21
1998	18
1999	4
2000	6
2001	2
2002	19
2003	3
2004	3
Total	548 miles of main that have been converted to protected coated status from unprotected coated status.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 17, 2005

Responsible: Paul R. Moul, Consultant (Cost of Capital)

BULK RESPONSE

RR-AG-97: Provide the workpapers for Mr. Moul's calculations regarding his August 8, 2005 testimony concerning his bias calculations.

Response: See Attachment RR-AG-97 (A) for the requested workpapers related to the Comparison Group and Attachment RR-AG-97 (B) for the requested workpapers related to NiSource.

Attachments RR-AG-97 (A) and (B) are each broken down into 4 respective parts: Part 1 includes biased results, Part 2 includes biased revised results, Part 3 included unbiased results, and Part 4 includes unbiased revised results.

Comparison Group
TWO-STEP
Biased Result

Current Dividend Yield	3.62%			<u>Bold indicates bias</u>	
Price/Next Dividend	26.975509	0	-26.97550874		IRR
		1	1.000000		
Short Run Growth proposed by Tim	5.01%	2	1.050110		
		3	1.102731		
Long Run Growth proposed by Tim	5.57%	4	1.157989		
		5	1.216016	1.276950231	
Term Short Run		6	1.283748		
		7	1.355253		
	9.21%	8	1.430740		
		9	1.510432		
	26.975402	10	1.594563	1.31130165	1.674467
		11	1.683381		
		12	1.777145		
		13	1.876132		
		14	1.980632		
<u>Years</u>		15	2.090954		
100	9.06553%	16	2.207420		
200	9.20123%	17	2.330373		
300	9.20528%	18	2.460175		
400	9.20542%	19	2.597206		
500	9.20543%	20	2.741871		
600	9.20543%	21	2.894593		
700	9.20543%	22	3.055822		
800	9.20543%	23	3.226031		
		24	3.405721		
		25	3.595420		
		26	3.795685		
		27	4.007104		
		28	4.230300		
		29	4.465928		
		30	4.714680		
		31	4.977288		
		32	5.254523		
		33	5.547199		
		34	5.856178		
		35	6.182368		
		36	6.526725		
		37	6.890264		
		38	7.274052		
		39	7.679216		
		40	8.106949		
		41	8.558506		
		42	9.035215		
		43	9.538476		
		44	10.069769		
		45	10.630655		
		46	11.222783		
		47	11.847892		
		48	12.507819		
		49	13.204505		
		50	13.939996		
		51	14.716454		
		52	15.536160		
		53	16.401524		
		54	17.315089		
		55	18.279540		
		56	19.297710		
		57	20.372592		
		58	21.507346		
		59	22.705305		
		60	23.969991		
		61	25.305119		
		62	26.714614		
		63	28.202618		
		64	29.773504		
		65	31.431888		
		66	33.182644		
		67	35.030918		
		68	36.982140		
		69	39.042045		
		70	41.216687		
		71	43.512456		
		72	45.936100		
		73	48.494741		
		74	51.195898		
		75	54.047509		
		76	57.057956		
		77	60.236084		

78	63.591234			
79	67.133265			
80	70.872588			
81	74.820191			
82	78.987676			
83	83.387290			
84	88.031962			
85	92.935342			
86	98.111840			
87	103.576670			
88	109.345891			
89	115.436457			
90	121.866267			
91	128.654218			
92	135.820258			
93	143.385447			
94	151.372016			
95	159.803437			
96	168.704489			
97	178.101329			
98	188.021573			
99	198.494374			
100	209.550511	172.3255002	220.0511	9.06553%
101	221.222475			
102	233.544566			
103	246.552999			
104	260.286001			
105	274.783931			
106	290.089396			
107	306.247375			
108	323.305354			
109	341.313462			
110	360.324622			
111	380.394704			
112	401.582689			
113	423.950845			
114	447.564907			
115	472.494272			
116	498.812203			
117	526.596043			
118	555.927442			
119	586.892601			
120	619.582518			
121	654.093265			
122	690.526260			
123	728.988572			
124	769.593236			
125	812.459579			
126	857.713577			
127	905.488224			
128	955.923918			
129	1009.168880			
130	1065.379587			
131	1124.721230			
132	1187.368202			
133	1253.504611			
134	1323.324818			
135	1397.034010			
136	1474.848805			
137	1556.997883			
138	1643.722665			
139	1735.278017			
140	1831.933003			
141	1933.971671			
142	2041.693893			
143	2155.416243			
144	2275.472928			
145	2402.216770			
146	2536.020244			
147	2677.276572			
148	2826.400877			
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150	3150.030815			
151	3325.487531			
152	3510.717187			
153	3706.264134			
154	3912.703046			
155	4130.640606			
156	4360.717288			
157	4603.609241			
158	4860.030276			
159	5130.733962			
160	5416.515844			
161	5718.215776			

162	6036.720395			
163	6372.965721			
164	6727.939911			
165	7102.686165			
166	7498.305784			
167	7915.961416			
168	8356.880467			
169	8822.358709			
170	9313.764089			
171	9832.540749			
172	10380.213268			
173	10958.391148			
174	11568.773534			
175	12213.154220			
176	12893.426910			
177	13611.590789			
178	14369.756396			
179	15170.151828			
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183	18843.085277			
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187	23405.293947			
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198	42487.368839			
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200	47352.278365	38940.5161	49725.1	9.20123%
201	49989.800270			
202	52774.232145			
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218	125623.320333			
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223	164730.067268			
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232	268310.438952			
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249	674258.509522			
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254	884156.296258			
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256	985394.393728			
257	1040280.861459			
258	1098224.505442			
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260	1223973.945894			
261	1292149.294681			
262	1364122.010394			
263	1440103.606373			
264	1520317.377248			
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266	1694397.502534			
267	1788775.443425			
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271	2221866.241316			
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273	2476275.458394			
274	2614204.001427			
275	2759815.164306			
276	2913536.868958			
277	3075820.872559			
278	3247144.095161			
279	3428010.021261			
280	3618950.179445			
281	3820525.704440			
282	4033328.986178			
283	4257985.410708			
284	4495155.198084			
285	4745535.342617			
286	5009861.661201			
287	5288910.955730			
288	5583503.295964			
289	5894504.429549			
290	6222828.326275			
291	6569439.864049			
292	6935357.664476			
293	7321657.086388			
294	7729473.386100			
295	8160005.053705			
296	8614517.335197			
297	9094345.950767			
298	9600901.020225			
299	10135671.207051			
300	10700228.093284	8799416.179	11236417	9.20528%
301	11296230.798080			
302	11925430.853533			
303	12589677.352075			
304	13290922.380586			
305	14031226.757184			
306	14812766.087559			
307	15637837.158636			
308	16508864.688372			
309	17428408.451515			
310	18399170.802264			
311	19424004.615950			
312	20505921.673059			
313	21648101.510248			
314	22853900.764369			
315	24126863.036944			
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319	29968357.787841			
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328	48812116.488941			
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332	60630301.132907			
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335	71336416.604196			
336	75309855.009050			
337	79504613.933054			
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339	88608090.194877			
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341	98753937.156335			
342	104254531.455943			
343	110061508.858039			
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347	136709139.148205			
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357	235073007.742427			
358	248166574.273680			
359	261989452.460724			
360	276582264.962787			
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362	308251622.990866			
363	325421238.391457			
364	343547201.369861			
365	362682780.486162			
366	382884211.359242			
367	404210861.931951			
368	426725406.941561			
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370	475586528.582633			
371	502076698.224686			
372	530042370.315801			
373	559565730.342391			
374	590733541.522462			
375	623637399.785264			
376	658374002.953303			
377	695045434.917802			
378	733759465.642723			
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381	863326916.579542			
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384	1015773424.112330			
385	1072352003.835380			
386	1132082010.449010			
387	1195138978.431020			
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389	1331985367.357430			
390	1406176952.319240			
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392	1567187714.740410			
393	1654480070.451450			
394	1746634610.375590			
395	1843922158.173510			
396	1946628622.383780			
397	2055055836.650560			
398	2169522446.751990			
399	2290364847.036080			
400	2417938169.015990	1988410346	2.54E+09	9.20542%
401	2552617325.030180			
402	2694798110.034360			
403	2844898364.763270			
404	3003359203.680590			
405	3170646311.325600			
406	3347251310.866430			
407	3533693208.881690			
408	3730519920.616410			
409	3938309880.194740			
410	4157673740.521590			
411	4389256167.868640			
412	4633737736.418920			
413	4891836928.337460			

414	5164312245.245850
415	5451964437.306050
416	5755638856.463990
417	6076227940.769040
418	6414673837.069880
419	6771971169.794670
420	7149169963.952230
421	7547378730.944370
422	7967767726.257970
423	8411572388.610540
424	8880096970.656150
425	9374718371.921700
426	9896890185.237740
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430	12293083672.088400
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432	13700672362.320900
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437	17965714278.769900
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439	20022833298.317600
440	21138105113.033900
441	22315497567.829900
442	23558470782.358100
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444	26255974347.530300
445	27718432118.687700
446	29262348787.698700
447	30892261615.173500
448	32612960587.138600
449	34429502491.842300
450	36347225780.637900
451	38371766256.619400
452	40509073637.113100
453	42765429038.700300
454	45147463436.155900
455	47662177149.549800
456	50316960416.779700
457	53119615111.994400
458	56078377673.732500
459	59201943310.159400
460	62499491552.535300
461	65980713232.011500
462	69655838959.034500
463	73535669189.052700
464	77631605962.883000
465	81955686415.015600
466	86520618148.332000
467	91339816579.194000
468	96427444362.655200
469	101798453013.655000
470	107468626846.516000
471	113454629361.867000
472	119774052217.323000
473	126445466925.827000
474	133488479433.596000
475	140923787738.047000
476	148773242715.057000
477	157059912334.285000
478	165808149451.305000
479	175043663375.743000
480	184793595425.772000
481	195086598690.987000
482	205952922238.075000
483	217424500006.736000
484	229535044657.111000
485	242320146644.512000
486	255817378812.611000
487	270066406812.474000
488	285109105671.929000
489	300989682857.855000
490	317754808193.038000
491	335453751009.390000
492	354138524940.613000
493	373864040779.805000
494	394688267851.240000
495	416672404370.555000
496	439881057293.995000
497	464382432185.270000

498	490248533657.990000			
499	517555376982.740000			
500	546383211480.678000	4.49323E+11	5.74E+11	9.20543%
501	576816756360.152000			
502	608945449689.413000			
503	642863711237.113000			
504	678671219953.020000			
505	716473206904.404000			
506	756380764528.979000			
507	798511173113.243000			
508	842988245455.651000			
509	889942690727.531000			
510	939512498601.054000			
511	991843344773.133000			
512	1047089019077.000000			
513	1105411877439.590000			
514	1166983319012.970000			
515	1231984289881.990000			
516	1300605814828.420000			
517	1373049558714.360000			
518	1449528419134.750000			
519	1530267152080.560000			
520	1615503032451.450000			
521	1705486551358.990000			
522	1800482152269.690000			
523	1900769008151.110000			
524	2006641841905.130000			
525	2118411792499.240000			
526	2236407329341.450000			
527	2360975217585.770000			
528	2492481537205.300000			
529	2631312758827.630000			
530	2777876879494.330000			
531	2932604621682.170000			
532	3095950699109.860000			
533	3268395153050.280000			
534	3450444763075.180000			
535	3642634536378.470000			
536	3845529280054.750000			
537	4059725260953.800000			
538	4285851957988.930000			
539	4524573912048.910000			
540	4776592678950.040000			
541	5042648891167.550000			
542	5323524434405.590000			
543	5620044745401.980000			
544	5933081237720.870000			
545	6263553862661.920000			
546	6612433812812.190000			
547	6980746376185.830000			
548	7369573949339.380000			
549	7780059218317.590000			
550	8213408516777.880000			
551	8670895371162.410000			
552	9153864243336.150000			
553	9663734481689.980000			
554	10202004492320.100000			
555	10770256142542.300000			
556	11370159409681.900000			
557	12003477288801.200000			
558	12672070973787.500000			
559	13377905327027.400000			
560	14123054653742.900000			
561	14909708797956.300000			
562	15740179578002.500000			
563	16616907580497.200000			
564	17542469332730.900000			
565	18519584874564.100000			
566	19551125752077.300000			
567	20640123456468.000000			
568	21789778332993.300000			
569	23003468986141.000000			
570	24284762208669.000000			
571	25637423463691.900000			
572	27065427950619.500000			
573	28572972287469.100000			
574	30164486843881.100000			
575	31844648761085.300000			
576	33618395697077.700000			
577	35490940337404.900000			
578	37467785714198.400000			
579	39554741378479.300000			
580	41757940473260.600000			
581	44083857757621.200000			

582	46539328634720.700000			
583	49131569239674.600000			
584	51868197646324.500000			
585	54757256255224.800000			
586	57807235428640.800000			
587	61027098442016.100000			
588	64426307825236.400000			
589	68014853171102.100000			
590	71803280492732.500000			
591	75802723216177.700000			
592	80024934899318.800000			
593	84482323773210.800000			
594	89187989207378.700000			
595	94155760206229.700000			
596	99400236049716.700000			
597	104936829197686.000000			
598	110781810583997.000000			
599	116952357433526.000000			
600	123466603742573.000000	1.01534E+14	1.3E+14	9.20543%
601	130343693571034.000000			
602	137603837302941.000000			
603	145268371040715.000000			
604	153359819307683.000000			
605	161901961243121.000000			
606	170919900484362.000000			
607	180440138941341.000000			
608	190490654680374.000000			
609	201100984146071.000000			
610	212302308963007.000000			
611	224127547572247.000000			
612	236611451972021.000000			
613	249790709846863.000000			
614	263704052385333.000000			
615	278392368103196.000000			
616	293898823006544.000000			
617	310268987448008.000000			
618	327550970048863.000000			
619	345795559080584.000000			
620	365056371721373.000000			
621	385390011626253.000000			
622	406856235273836.000000			
623	429518127578588.000000			
624	453442287284716.000000			
625	478699022686474.000000			
626	505362558250111.000000			
627	533511252744642.000000			
628	563227829522519.000000			
629	594599619626923.000000			
630	627718818440143.000000			
631	662682756627259.000000			
632	699594186171397.000000			
633	738561582341144.000000			
634	779699462477546.000000			
635	823128722537545.000000			
636	868976992382887.000000			
637	917379010858613.000000			
638	968477021763438.000000			
639	1022421191875660.000000			
640	1079370052263140.000000			
641	1139490964174190.000000			
642	1202960610878700.000000			
643	1269965516904640.000000			
644	1340702596196230.000000			
645	1415379730804360.000000			
646	1494216381810160.000000			
647	1577444234276990.000000			
648	1665307878126210.000000			
649	1758065526937850.000000			
650	1855989776788280.000000			
651	1959368407355390.000000			
652	2068505227645090.000000			
653	2183720968824920.000000			
654	2305354226788470.000000			
655	2433762457220580.000000			
656	2569323026087770.000000			
657	2712434318640860.000000			
658	2863516910189150.000000			
659	3023014802086690.000000			
660	3191396726562920.000000			
661	3369157524232470.000000			
662	3556819598332220.000000			
663	3754934449959330.000000			
664	3964084298822060.000000			
665	4184883794266450.000000			

666	4417981821607100.000000			
667	4664063409070610.000000			
668	4923851740955840.000000			
669	5198110282927080.000000			
670	5487645025686120.000000			
671	5793306853616840.000000			
672	6115994045363300.000000			
673	6456654913690040.000000			
674	6816290592382570.000000			
675	7195957978378280.000000			
676	7596772837773950.000000			
677	8019913084837960.000000			
678	8466622243663440.000000			
679	8938213102635490.000000			
680	9436071572452290.000000			
681	9961660759037880.000000			
682	10516525263316300.000000			
683	11102295720483000.000000			
684	11720693592113900.000000			
685	12373536225194700.000000			
686	13062742192938000.000000			
687	13790336933084700.000000			
688	14558458700257500.000000			
689	15369364849861800.000000			
690	16225438471999100.000000			
691	17129195394889500.000000			
692	18083291578384800.000000			
693	19090530919300800.000000			
694	20153873491505900.000000			
695	21276444244982800.000000			
696	22461542189428300.000000			
697	23712650089379500.000000			
698	25033444699357900.000000			
699	26427807569112200.000000			
700	27899836450711700.000000	2.29436E+16	2.93E+16	9.20543%
701	29453857341016400.000000			
702	31094437194911000.000000			
703	32826397346667500.000000			
704	34654827678876900.000000			
705	36585101580590400.000000			
706	38622891738629200.000000			
707	40774186808470900.000000			
708	43045309013702700.000000			
709	45442932725766000.000000			
710	47974104078591200.000000			
711	50646261675768700.000000			
712	53467258451109000.000000			
713	56445384746835800.000000			
714	59589392677234500.000000			
715	62908521849356500.000000			
716	66412526516365700.000000			
717	70111704243327200.000000			
718	74016926169680600.000000			
719	78139668957331800.000000			
720	82492048518255200.000000			
721	87086855620722000.000000			
722	91937593478796200.000000			
723	97058517435565200.000000			
724	102464676856726000.000000			
725	108171959357646000.000000			
726	114197137493867000.000000			
727	120557918052275000.000000			
728	127272994087787000.000000			
729	134362099858477000.000000			
730	141846068820594000.000000			
731	149746894853901000.000000			
732	158087796897263000.000000			
733	166893287184441000.000000			
734	176189243280614000.000000			
735	186002984131344000.000000			
736	196363350347460000.000000			
737	207300788961814000.000000			
738	218847442906987000.000000			
739	231037245476906000.000000			
740	243906020049969000.000000			
741	257491585366753000.000000			
742	271833866671681000.000000			
743	286975013045294000.000000			
744	302959521271916000.000000			
745	319834366606762000.000000			
746	337649140826759000.000000			
747	356456197970809000.000000			
748	376310808197784000.000000			
749	397271320214400000.000000			

750	419399332750342000.000000			
751	442759875584536000.000000			
752	467421600654595000.000000			
753	493456983811056000.000000			
754	520942537809332000.000000			
755	549959037165312000.000000			
756	580591755535420000.000000			
757	612930716318743000.000000			
758	647070957217697000.000000			
759	683112809534722000.000000			
760	721162193025806000.000000			
761	761330927177344000.000000			
762	803737059821122000.000000			
763	848505214053159000.000000			
764	895766954475920000.000000			
765	945661173840228000.000000			
766	998334501223129000.000000			
767	1053941732941260000.000000			
768	1112646287466090000.000000			
769	1174620685677950000.000000			
770	1240047057870210000.000000			
771	1309117678993580000.000000			
772	1382035533713520000.000000			
773	1459014912941360000.000000			
774	1540282043592200000.000000			
775	1626075753420280000.000000			
776	1716648172885790000.000000			
777	1812265476115530000.000000			
778	1913208663135170000.000000			
779	2019774385671800000.000000			
780	2132275818953720000.000000			
781	2251043582069440000.000000			
782	2376426709590710000.000000			
783	2508793677314910000.000000			
784	2648533485141350000.000000			
785	2796056800263720000.000000			
786	2951797164038410000.000000			
787	3116212266075350000.000000			
788	3289785289295750000.000000			
789	3473026329909520000.000000			
790	3666473896485490000.000000			
791	3870696492519730000.000000			
792	4086294287153080000.000000			
793	4313900878947500000.000000			
794	4554185157904880000.000000			
795	4807853271200180000.000000			
796	5075650698406030000.000000			
797	5358364442307250000.000000			
798	5656825341743760000.000000			
799	5971910513278890000.000000			
800	6304545928868530000.000000	5.18459E+18	6.62E+18	9.20543%

Comparison Group
TWO-STEP
Biased Result Revised

Current Dividend Yield	3.62%			<u>Bold indicates bias</u>	
Price/Next Dividend	26.910009	0	-26.91000935		<u>IRR</u>
		1	1.000000		
Short Run Growth Revised	5.51%	2	1.055100		
		3	1.113236		
Long Run Growth Revised	6.30%	4	1.174575		
		5	1.239294	1.307579536	
Term Short Run		6	1.317370		
		7	1.400364		
	9.92%	8	1.488587		
		9	1.582368		
	26.910011	10	1.682057	1.357270227	1.774739
		11	1.788027		
		12	1.900673		
		13	2.020415		
		14	2.147701		
<u>Years</u>		15	2.283006		
100	9.76993%	16	2.426836		
200	9.91097%	17	2.579727		
301	9.91535%	18	2.742249		
401	9.91550%	19	2.915011		
501	9.91551%	20	3.098657		
600	9.91551%	21	3.293872		
700	9.91551%	22	3.501386		
800	9.91551%	23	3.721973		
		24	3.956458		
		25	4.205714		
		26	4.470674		
		27	4.752327		
		28	5.051724		
		29	5.369982		
		30	5.708291		
		31	6.067913		
		32	6.450192		
		33	6.856554		
		34	7.288517		
		35	7.747693		
		36	8.235798		
		37	8.754653		
		38	9.306197		
		39	9.892487		
		40	10.515714		
		41	11.178204		
		42	11.882430		
		43	12.631024		
		44	13.426778		
		45	14.272665		
		46	15.171843		
		47	16.127669		
		48	17.143712		
		49	18.223766		
		50	19.371863		
		51	20.592291		
		52	21.889605		
		53	23.268650		
		54	24.734575		
		55	26.292853		
		56	27.949303		
		57	29.710109		
		58	31.581846		
		59	33.571502		
		60	35.686507		
		61	37.934757		
		62	40.324647		
		63	42.865099		
		64	45.565601		
		65	48.436233		
		66	51.487716		
		67	54.731442		
		68	58.179523		
		69	61.844833		
		70	65.741058		
		71	69.882744		
		72	74.285357		
		73	78.965335		
		74	83.940151		
		75	89.228380		
		76	94.849768		
		77	100.825303		

78	107.177298			
79	113.929467			
80	121.107024			
81	128.736766			
82	136.847183			
83	145.468555			
84	154.633074			
85	164.374958			
86	174.730580			
87	185.738607			
88	197.440139			
89	209.878868			
90	223.101236			
91	237.156614			
92	252.097481			
93	267.979622			
94	284.862338			
95	302.808665			
96	321.885611			
97	342.164405			
98	363.720762			
99	386.635170			
100	410.993186	331.6348251	433.6389	9.76993%
101	436.885757			
102	464.409560			
103	493.667362			
104	524.768406			
105	557.828815			
106	592.972031			
107	630.329269			
108	670.040012			
109	712.252533			
110	757.124443			
111	804.823283			
112	855.527150			
113	909.425360			
114	966.719158			
115	1027.622465			
116	1092.362680			
117	1161.181529			
118	1234.335965			
119	1312.099131			
120	1394.761376			
121	1482.631343			
122	1576.037117			
123	1675.327456			
124	1780.873085			
125	1893.068090			
126	2012.331380			
127	2139.108256			
128	2273.872077			
129	2417.126017			
130	2569.404956			
131	2731.277469			
132	2903.347949			
133	3086.258870			
134	3280.693179			
135	3487.376849			
136	3707.081591			
137	3940.627731			
138	4188.887278			
139	4452.787176			
140	4733.312769			
141	5031.511473			
142	5348.496696			
143	5685.451988			
144	6043.635463			
145	6424.384497			
146	6829.120720			
147	7259.355326			
148	7716.694711			
149	8202.846478			
150	8719.625806			
151	9268.962232			
152	9852.906852			
153	10473.639984			
154	11133.479303			
155	11834.888499			
156	12580.486475			
157	13373.057123			
158	14215.559721			
159	15111.139984			
160	16063.141803			
161	17075.119736			

162	18150.852280			
163	19294.355973			
164	20509.900400			
165	21802.024125			
166	23175.551645			
167	24635.611398			
168	26187.654916			
169	27837.477176			
170	29591.238238			
171	31455.486247			
172	33437.181881			
173	35543.724339			
174	37782.978973			
175	40163.306648			
176	42693.594967			
177	45383.291450			
178	48242.438811			
179	51281.712456			
180	54512.460341			
181	57946.745343			
182	61597.390299			
183	65478.025888			
184	69603.141519			
185	73988.139435			
186	78649.392219			
187	83604.303929			
188	88871.375076			
189	94470.271706			
190	100421.898824			
191	106748.478449			
192	113473.632592			
193	120622.471445			
194	128221.687146			
195	136299.653436			
196	144886.531603			
197	154014.383094			
198	163717.289229			
199	174031.478450			
200	184995.461592	149274.8289	195188.7	9.91097%
201	196650.175673			
202	209039.136740			
203	222208.602355			
204	236207.744303			
205	251088.832194			
206	266907.428622			
207	283722.596626			
208	301597.120213			
209	320597.738787			
210	340795.396330			
211	362265.506299			
212	385088.233196			
213	409348.791887			
214	435137.765776			
215	462551.445020			
216	491692.186056			
217	522668.793778			
218	555596.927786			
219	590599.534236			
220	627807.304893			
221	667359.165101			
222	709402.792503			
223	754095.168430			
224	801603.164041			
225	852104.163376			
226	905786.725669			
227	962851.289386			
228	1023510.920617			
229	1087992.108616			
230	1156535.611459			
231	1229397.354981			
232	1306849.388344			
233	1389180.899810			
234	1476699.296498			
235	1569731.352177			
236	1668624.427365			
237	1773747.766289			
238	1885493.875565			
239	2004279.989725			
240	2130549.629078			
241	2264774.255710			
242	2407455.033820			
243	2559124.700950			
244	2720349.557110			
245	2891731.579208			

246	3073910.668698			
247	3267567.040826			
248	3473423.764398			
249	3692249.461555			
250	3924861.177633			
251	4172127.431824			
252	4434971.460029			
253	4714374.662011			
254	5011380.265718			
255	5327097.222458			
256	5662704.347473			
257	6019454.721363			
258	6398680.368809			
259	6801797.232044			
260	7230310.457663			
261	7685820.016496			
262	8170026.677535			
263	8684738.358220			
264	9231876.874788			
265	9813485.117899			
266	10431734.680327			
267	11088933.965187			
268	11787536.804994			
269	12530151.623709			
270	13319551.176003			
271	14158682.900091			
272	15050679.922796			
273	15998872.757933			
274	17006801.741682			
275	18078230.251408			
276	19217158.757247			
277	20427839.758954			
278	21714793.663768			
279	23082825.664585			
280	24537043.681454			
281	26082877.433386			
282	27726098.711689			
283	29472842.930525			
284	31329632.035148			
285	33303398.853363			
286	35401512.981124			
287	37631808.298935			
288	40002612.221768			
289	42522776.791740			
290	45201711.729619			
291	48049419.568585			
292	51076533.001406			
293	54294354.580495			
294	57714898.919066			
295	61350937.550967			
296	65216046.616678			
297	69324657.553529			
298	73692110.979401			
299	78334713.971103			
300	83269800.951283	67191298.54	87857967	9.91535%
301	88515798.411213			
302	94092293.711120			
303	100020108.214920			
304	106321375.032460			
305	113019621.659505			
306	120139857.824054			
307	127708668.866970			
308	135754315.005589			
309	144306836.850941			
310	153398167.572550			
311	163062252.129621			
312	173335174.013787			
313	184255289.976655			
314	195863373.245185			
315	208202765.759631			
316	221319540.002488			
317	235262671.022645			
318	250084219.297071			
319	265839525.112787			
320	282587415.194892			
321	300390422.352170			
322	319315018.960357			
323	339431865.154860			
324	360816072.659616			
325	383547485.237171			
326	407710976.807113			
327	433396768.345961			
328	460700764.751757			
329	489724912.931117			

330	520577582.445778			
331	553373970.139862			
332	588236530.258673			
333	625295431.664969			
334	664689043.859862			
335	706564453.623034			
336	751078014.201285			
337	798395929.095966			
338	848694872.629012			
339	902162649.604639			
340	958998896.529731			
341	1019415827.011100			
342	1083639024.112800			
343	1151908282.631910			
344	1224478504.437720			
345	1301620650.217300			
346	1383622751.180990			
347	1470790984.505390			
348	1563450816.529230			
349	1661948217.970570			
350	1766650955.702720			
351	1877949965.911990			
352	1996260813.764440			
353	2122025245.031600			
354	2255712835.468590			
355	2397822744.103110			
356	2548885576.981610			
357	2709465368.331450			
358	2880161686.536330			
359	3061611872.788120			
360	3254493420.773770			
361	3459526506.282520			
362	3677476676.178320			
363	3909157706.777550			
364	4155434642.304540			
365	4417227024.769720			
366	4695512327.330220			
367	4991329603.952020			
368	5305783369.001000			
369	5640047721.248060			
370	5995370727.686690			
371	6373079083.530950			
372	6774583065.793400			
373	7201381798.938380			
374	7655068852.271500			
375	8137338189.964600			
376	8649990495.932370			
377	9194939897.176110			
378	9774221110.698200			
379	10389997040.672200			
380	11044566854.234500			
381	11740374566.051300			
382	12480018163.712500			
383	13266259308.026400			
384	14102033644.432100			
385	14990461764.031300			
386	15934860855.165300			
387	16938757089.040700			
388	18005898785.650300			
389	19140270409.146200			
390	20346107444.922400			
391	21627912213.952500			
392	22990470683.431600			
393	24438870336.487700			
394	25978519167.686500			
395	27615165875.250700			
396	29354921325.391500			
397	31204281368.891200			
398	33170151095.131300			
399	35259870614.124600			
400	37481242462.814400	30244017919	3.95E+10	9.91550%
401	39842560737.971700			
402	42352642064.464000			
403	45020858514.525200			
404	47857172600.940300			
405	50872174474.799500			
406	54077121466.711900			
407	57483980119.114700			
408	61105470866.619000			
409	64955115531.216000			
410	69047287809.682600			
411	73397266941.692600			
412	78021294759.019200			
413	82936636328.837400			

414	88161644417.554100
415	93715828015.860000
416	99619925180.859200
417	105895980467.253000
418	112567427236.690000
419	119659175152.602000
420	127197703187.216000
421	135211158488.010000
422	143729461472.755000
423	152784417545.538000
424	162409835850.907000
425	172641655509.515000
426	183518079806.614000
427	195079718834.431000
428	207369741121.000000
429	220434034811.623000
430	234321379004.755000
431	249083625882.055000
432	264775894312.624000
433	281456775654.319000
434	299188552520.541000
435	318037431329.335000
436	338073789503.083000
437	359372438241.778000
438	382012901851.010000
439	406079714667.623000
440	431662736691.684000
441	458857489103.260000
442	487765510916.765000
443	518494738104.521000
444	551159906605.106000
445	585882980721.227000
446	622793608506.665000
447	662029605842.584000
448	703737471010.667000
449	748072931684.339000
450	795201526380.453000
451	845299222542.421000
452	898553073562.594000
453	955161917197.037000
454	1015337117980.450000
455	1079303356413.220000
456	1147299467867.250000
457	1219579334342.890000
458	1296412832406.490000
459	1378086840848.100000
460	1464906311821.530000
461	1557195409466.290000
462	1655298720262.660000
463	1759582539639.210000
464	1870436239636.480000
465	1988273722733.580000
466	2113534967265.790000
467	2246687670203.540000
468	2388228993426.360000
469	2538687420012.220000
470	2698624727472.990000
471	2868638085303.790000
472	3049362284677.930000
473	3241472108612.640000
474	3445684851455.230000
475	3662762997096.910000
476	3893517065914.020000
477	4138808641066.600000
478	4399553585453.790000
479	4676725461337.380000
480	4971359165401.640000
481	5284554792821.940000
482	5617481744769.720000
483	5971383094690.210000
484	6347580229655.700000
485	6747477784124.010000
486	7172568884523.820000
487	7624440724248.820000
488	8104780489876.490000
489	8615381660738.710000
490	9158150705365.250000
491	9735114199803.260000
492	10348426394390.900000
493	11000377257237.500000
494	11693401024443.500000
495	12430085288983.400000
496	13213180662189.300000
497	14045611043907.300000

498	14930484539673.400000			
499	15871105065672.900000			
500	16870984684810.200000	1.36134E+13	1.78E+13	9.91551%
501	17933856719953.300000			
502	19063689693310.300000			
503	20264702143988.900000			
504	21541378379060.200000			
505	22898485216941.000000			
506	24341089785608.300000			
507	25874578442101.600000			
508	27504676883954.000000			
509	29237471527643.100000			
510	31079432233884.600000			
511	33037436464619.300000			
512	35118794961890.300000			
513	37331279044489.400000			
514	39683149624292.300000			
515	42183188050622.700000			
516	44840728897811.900000			
517	47665694818374.000000			
518	50668633591931.600000			
519	53860757508223.300000			
520	57253985231241.400000			
521	60860986300809.600000			
522	64695228437760.600000			
523	68771027829339.500000			
524	73103602582587.800000			
525	77709129545290.900000			
526	82604804706644.200000			
527	87808907403162.800000			
528	93340868569562.000000			
529	99221343289444.400000			
530	105472287916679.000000			
531	112117042055430.000000			
532	119180415704922.000000			
533	126688781894332.000000			
534	134670175153675.000000			
535	143154396188357.000000			
536	152173123148223.000000			
537	161760029906561.000000			
538	171950911790675.000000			
539	182783819233487.000000			
540	194299199845197.000000			
541	206540049435444.000000			
542	219552072549877.000000			
543	233383853120520.000000			
544	248087035867112.000000			
545	263716519126740.000000			
546	280330659831725.000000			
547	297991491401124.000000			
548	316764955359394.000000			
549	336721147547036.000000			
550	357934579842500.000000			
551	380484458372577.000000			
552	404454979250049.000000			
553	429935642942802.000000			
554	457021588448199.000000			
555	485813948520435.000000			
556	516420227277223.000000			
557	548954701595688.000000			
558	583538847796216.000000			
559	620301795207378.000000			
560	659380808305442.000000			
561	700921799228685.000000			
562	745079872580092.000000			
563	792019904552638.000000			
564	841917158539454.000000			
565	894957939527440.000000			
566	951340289717668.000000			
567	1011274727969880.000000			
568	1074985035831980.000000			
569	1142709093089400.000000			
570	1214699765954030.000000			
571	1291225851209130.000000			
572	1372573079835310.000000			
573	1459045183864930.000000			
574	1550965030448430.000000			
575	1648675827366680.000000			
576	1752542404490780.000000			
577	1862952575973700.000000			
578	1980318588260040.000000			
579	2105078659320420.000000			
580	2237698614857610.000000			
581	2378673627593640.000000			

582	2528530066132040.000000			
583	2687827460298350.000000			
584	2857160590297150.000000			
585	3037161707485870.000000			
586	3228502895057480.000000			
587	3431898577446100.000000			
588	3648108187825200.000000			
589	3877939003658190.000000			
590	4122249160888660.000000			
591	4381950858024640.000000			
592	4658013762080190.000000			
593	4951468629091250.000000			
594	5263411152723990.000000			
595	5595006055345610.000000			
596	5947491436832380.000000			
597	6322183397352820.000000			
598	6720480951386050.000000			
599	7143871251323370.000000			
600	7593935140156740.000000	6.12763E+15	8.01E+15	9.91551%
601	8072353053986610.000000			
602	8580911296387770.000000			
603	9121508708060200.000000			
604	9696163756667990.000000			
605	10307022073338100.000000			
606	10956364463958400.000000			
607	11646615425187700.000000			
608	12380352196974600.000000			
609	13160314385384000.000000			
610	13989414191663200.000000			
611	14870747285737900.000000			
612	15807604364739400.000000			
613	16803483439718000.000000			
614	17862102896420200.000000			
615	18987415378894700.000000			
616	20183622547765100.000000			
617	21455190768274300.000000			
618	22806867786675600.000000			
619	24243700457236100.000000			
620	25771053586042000.000000			
621	27394629961962700.000000			
622	29120491649566300.000000			
623	30955082623489000.000000			
624	32905252828768800.000000			
625	34978283756981200.000000			
626	37181915633671000.000000			
627	39524376318592300.000000			
628	42014412026663600.000000			
629	44661319984343400.000000			
630	47474983143357000.000000			
631	50465907081388500.000000			
632	53645259227516000.000000			
633	57024910558849500.000000			
634	60617479924057000.000000			
635	64436381159272600.000000			
636	68495873172306800.000000			
637	72811113182162100.000000			
638	77398213312638300.000000			
639	82274300751334500.000000			
640	87457581698668600.000000			
641	92967409345684700.000000			
642	98824356134462800.000000			
643	105050290570934000.000000			
644	111668458876903000.000000			
645	118703571786148000.000000			
646	126181896808675000.000000			
647	134131356307621000.000000			
648	142581631755002000.000000			
649	151564274555567000.000000			
650	161112823852567000.000000			
651	171262931755279000.000000			
652	182052496455862000.000000			
653	193521803732581000.000000			
654	205713677367734000.000000			
655	218673639041901000.000000			
656	232450078301541000.000000			
657	247094433234538000.000000			
658	262661382528314000.000000			
659	279209049627597000.000000			
660	296799219754136000.000000			
661	315497570598646000.000000			
662	335373917546361000.000000			
663	356502474351782000.000000			
664	378962130235944000.000000			
665	402836744440809000.000000			

666	428215459340579000.000000			
667	455193033279036000.000000			
668	483870194375615000.000000			
669	514354016621279000.000000			
670	546758319668420000.000000			
671	581204093807530000.000000			
672	617819951717404000.000000			
673	656742608675601000.000000			
674	698117393022163000.000000			
675	742098788782560000.000000			
676	788851012475861000.000000			
677	838548626261840000.000000			
678	891377189716336000.000000			
679	947533952668465000.000000			
680	1007228591686580000.000000			
681	1070683992962830000.000000			
682	1138137084519490000.000000			
683	1209839720844220000.000000			
684	1286059623257400000.000000			
685	1367081379522620000.000000			
686	1453207506432550000.000000			
687	1544759579337800000.000000			
688	1642079432836080000.000000			
689	1745530437104750000.000000			
690	1855498854642350000.000000			
691	1972395282484820000.000000			
692	2096656185281360000.000000			
693	2228745524954090000.000000			
694	23691564930261900000.000000			
695	2518413352086840000.000000			
696	2677073393268320000.000000			
697	2845729017044220000.000000			
698	3025009945118010000.000000			
699	3215585571660440000.000000			
700	3418167462675050000.000000	2.75816E+18	3.61E+18	9.91551%
701	3633512012823570000.000000			
702	3862423269631460000.000000			
703	4105755935618240000.000000			
704	4364418559562190000.000000			
705	4639376928814610000.000000			
706	4931657675329930000.000000			
707	5242352108875710000.000000			
708	5572620291734880000.000000			
709	5923695370114180000.000000			
710	6296888178431370000.000000			
711	6693592133672550000.000000			
712	7115288438093920000.000000			
713	7563551609693830000.000000			
714	8040055361104550000.000000			
715	8546578848854130000.000000			
716	9085013316331940000.000000			
717	9657369155260850000.000000			
718	10265783412042300000.000000			
719	10912527767001000000.000000			
720	11600017016322000000.000000			
721	12330818088350300000.000000			
722	13107659627916400000.000000			
723	13933442184475100000.000000			
724	14811249042097000000.000000			
725	15744357731749100000.000000			
726	16736252268849300000.000000			
727	17790636161786800000.000000			
728	18911446239979400000.000000			
729	20102867353098100000.000000			
730	21369347996343300000.000000			
731	22715616920112900000.000000			
732	24146700786080000000.000000			
733	25667942935603100000.000000			
734	27285023340546000000.000000			
735	29003979811000400000.000000			
736	30831230539093500000.000000			
737	32773598063056400000.000000			
738	34838334741028900000.000000			
739	37033149829713700000.000000			
740	39366238268985700000.000000			
741	41846311279931800000.000000			
742	4448262890567500000.000000			
743	47285034510673200000.000000			
744	50263991684845600000.000000			
745	53430623160990900000.000000			
746	56796752420133300000.000000			
747	60374947822601700000.000000			
748	64178569535425700000.000000			
749	68221819416157500000.000000			

750	72519794039375400000.000000			
751	77088541063856000000.000000			
752	81945119150878900000.000000			
753	87107661657384300000.000000			
754	92595444341799500000.000000			
755	98428957335329000000.000000			
756	104629981647459000000.000000			
757	111221670491249000000.000000			
758	118228635732197000000.000000			
759	125677039783326000000.000000			
760	133594693289675000000.000000			
761	142011158966925000000.000000			
762	150957861981841000000.000000			
763	160468207286697000000.000000			
764	170577704345759000000.000000			
765	181324099719542000000.000000			
766	192747518001873000000.000000			
767	204890611635991000000.000000			
768	217798720169059000000.000000			
769	231520039539709000000.000000			
770	246105802030711000000.000000			
771	261610467558646000000.000000			
772	278091927014840000000.000000			
773	295611718416775000000.000000			
774	314235256677032000000.000000			
775	334032077847685000000.000000			
776	355076098752089000000.000000			
777	377445892973471000000.000000			
778	401224984230799000000.000000			
779	426502158237340000000.000000			
780	453371794206292000000.000000			
781	481934217241289000000.000000			
782	512296072927490000000.000000			
783	544570725521922000000.000000			
784	578878681229803000000.000000			
785	615348038147280000000.000000			
786	654114964550559000000.000000			
787	695324207317244000000.000000			
788	739129632378230000000.000000			
789	785694799218059000000.000000			
790	835193571568796000000.000000			
791	887810766577630000000.000000			
792	943742844872021000000.000000			
793	100319864409896000000.000000			
794	1066400158677190000000.000000			
795	1133583368673860000000.000000			
796	1204999120900310000000.000000			
797	1280914065517030000000.000000			
798	1361611651644600000000.000000			
799	1447393185698210000000.000000			
800	1538578956397200000000.000000	1.2415E+21	1.62E+21	9.91551%

Comparison Group
TWO-STEP
Unbiased Result

Current Dividend Yield	3.62%				
Price/Next Dividend	26.975509	0	-26.97550874		<u>IRR</u>
		1	1.050110		
Short Run Growth proposed by Tim	5.01%	2	1.102731		
		3	1.157989		
Long Run Growth proposed by Tim	5.57%	4	1.216016		
		5	1.276950	1.276950231	
Term Short Run	5	6	1.348076		
		7	1.423164		
	9.39%	8	1.502434		
		9	1.586120		
		10	1.674467	1.31130165	1.674467
		11	1.767735		
		12	1.866198		
		13	1.970145		
<u>Years</u>		14	2.079882		
100	9.26559%	15	2.195731		
200	9.38475%	16	2.318034		
300	9.38781%	17	2.447148		
400	9.38790%	18	2.583454		
500	9.38790%	19	2.727353		
600	9.38790%	20	2.879266		
700	9.38790%	21	3.039641		
800	9.38790%	22	3.208949		
		23	3.387688		
		24	3.576382		
		25	3.775586		
		26	3.985886		
		27	4.207900		
		28	4.442280		
		29	4.689715		
		30	4.950933		
		31	5.226699		
		32	5.517827		
		33	5.825170		
		34	6.149632		
		35	6.492166		
		36	6.853780		
		37	7.235535		
		38	7.638555		
		39	8.064022		
		40	8.513188		
		41	8.987373		
		42	9.487969		
		43	10.016449		
		44	10.574365		
		45	11.163358		
		46	11.785157		
		47	12.441590		
		48	13.134586		
		49	13.866183		
		50	14.638529		
		51	15.453895		
		52	16.314677		
		53	17.223405		
		54	18.182748		
		55	19.195527		
		56	20.264718		
		57	21.393463		
		58	22.585079		
		59	23.843068		
		60	25.171127		
		61	26.573159		
		62	28.053283		
		63	29.615851		
		64	31.265454		

65	33.006940			
66	34.845427			
67	36.786317			
68	38.835315			
69	40.998442			
70	43.282055			
71	45.692865			
72	48.237958			
73	50.924812			
74	53.761324			
75	56.755830			
76	59.917130			
77	63.254514			
78	66.777790			
79	70.497313			
80	74.424014			
81	78.569431			
82	82.945749			
83	87.565827			
84	92.443243			
85	97.592332			
86	103.028225			
87	108.766897			
88	114.825213			
89	121.220977			
90	127.972986			
91	135.101081			
92	142.626211			
93	150.570491			
94	158.957268			
95	167.811188			
96	177.158271			
97	187.025986			
98	197.443334			
99	208.440928			
100	220.051087	172.3255002	220.0511	9.26559%
101	232.307933			
102	245.247485			
103	258.907770			
104	273.328932			
105	288.553354			
106	304.625776			
107	321.593431			
108	339.506186			
109	358.416680			
110	378.380489			
111	399.456282			
112	421.705997			
113	445.195021			
114	469.992384			
115	496.170960			
116	523.807682			
117	552.983770			
118	583.784966			
119	616.301789			
120	650.629798			
121	686.869878			
122	725.128530			
123	765.518190			
124	808.157553			
125	853.171928			
126	900.693605			
127	950.862239			
128	1003.825265			
129	1059.738333			
130	1118.765758			
131	1181.081010			
132	1246.867223			
133	1316.317727			
134	1389.636624			
135	1467.039384			

136	1548.753478			
137	1635.019047			
138	1726.089608			
139	1822.232799			
140	1923.731166			
141	2030.882992			
142	2144.003174			
143	2263.424151			
144	2389.496876			
145	2522.591852			
146	2663.100219			
147	2811.434901			
148	2968.031825			
149	3133.351197			
150	3307.878859			
151	3492.127712			
152	3686.639225			
153	3891.985030			
154	4108.768596			
155	4337.627007			
156	4579.232831			
157	4834.296100			
158	5103.566393			
159	5387.835041			
160	5687.937453			
161	6004.755569			
162	6339.220454			
163	6692.315033			
164	7065.076980			
165	7458.601768			
166	7874.045887			
167	8312.630243			
168	8775.643747			
169	9264.447104			
170	9780.476808			
171	10325.249366			
172	10900.365755			
173	11507.516128			
174	12148.484776			
175	12825.155378			
176	13539.516533			
177	14293.667604			
178	15089.824889			
179	15930.328136			
180	16817.647413			
181	17754.390374			
182	18743.309917			
183	19787.312280			
184	20889.465574			
185	22053.008806			
186	23281.361397			
187	24578.133227			
188	25947.135247			
189	27392.390681			
190	28918.146842			
191	30528.887621			
192	32229.346661			
193	34024.521270			
194	35919.687105			
195	37920.413677			
196	40032.580718			
197	42262.395464			
198	44616.410892			
199	47101.544978			
200	49725.101034	38940.5161	49725.1	9.38475%
201	52494.789161			
202	55418.748918			
203	58505.573232			
204	61764.333661			
205	65204.607046			
206	68836.503659			

207	72670.696913
208	76718.454731
209	80991.672659
210	85502.908826
211	90265.420848
212	95293.204789
213	100601.036296
214	106204.514017
215	112120.105448
216	118365.195322
217	124958.136701
218	131918.304915
219	139266.154499
220	147023.279305
221	155212.475962
222	163857.810873
223	172984.690939
224	182619.938224
225	192791.868783
226	203530.375874
227	214867.017811
228	226835.110703
229	239469.826369
230	252808.295697
231	266889.717768
232	281755.475048
233	297449.255008
234	314017.178512
235	331507.935355
236	349972.927354
237	369466.419408
238	390045.698969
239	411771.244401
240	434706.902714
241	458920.077195
242	484481.925495
243	511467.568745
244	539956.312324
245	570031.878921
246	601782.654577
247	635301.948437
248	670688.266965
249	708045.603435
250	747483.743546
251	789118.588061
252	833072.493416
253	879474.631300
254	928461.368263
255	980176.666475
256	1034772.506798
257	1092409.335427
258	1153256.535410
259	1217492.924432
260	1285307.280323
261	1356898.895837
262	1432478.164335
263	1512267.198089
264	1596500.481022
265	1685425.557815
266	1779303.761385
267	1878410.980895
268	1983038.472530
269	2093493.715450
270	2210101.315401
271	2333203.958669
272	2463163.419167
273	2600361.621614
274	2745201.763938
275	2898109.502190
276	3059534.201461
277	3229950.256483

278	3409858.485769			
279	3599787.603426			
280	3800295.772937			
281	4011972.247490			
282	4235439.101675			
283	4471353.059638			
284	4720407.425060			
285	4983334.118636			
286	5260905.829044			
287	5553938.283722			
288	5863292.646125			
289	6189878.046514			
290	6534654.253705			
291	6898634.495636			
292	7282888.437043			
293	7688545.322987			
294	8116797.297477			
295	8568902.906947			
296	9046190.798863			
297	9550063.626360			
298	10082002.170348			
299	10643569.691237			
300	11236416.523039	8799416.179	11236417	9.38781%
301	11862284.923372			
302	12523014.193604			
303	13220546.084188			
304	13956930.501077			
305	14734331.529987			
306	15555033.796207			
307	16421449.178656			
308	17336123.897907			
309	18301745.999020			
310	19321153.251166			
311	20397341.487256			
312	21533473.408096			
313	22732887.876927			
314	23999109.731671			
315	25335860.143726			
316	26747067.553731			
317	28236879.216474			
318	29809673.388832			
319	31470072.196589			
320	33222955.217939			
321	35073473.823579			
322	37027066.315552			
323	39089473.909328			
324	41266757.606078			
325	43565316.004736			
326	45991904.106200			
327	48553653.164916			
328	51258091.646201			
329	54113167.350895			
330	57127270.772340			
331	60309259.754359			
332	63668485.522677			
333	67214820.166290			
334	70958685.649552			
335	74911084.440232			
336	79083631.843553			
337	83488590.137239			
338	88138904.607883			
339	93048241.594542			
340	98231028.651358			
341	103702496.947239			
342	109478726.027200			
343	115576691.066915			
344	122014312.759343			
345	128810509.980038			
346	135985255.385926			
347	143559634.110922			
348	151555905.730900			

349	159997569.680112			
350	168909434.311294			
351	178317689.802433			
352	188249985.124429			
353	198735509.295859			
354	209805077.163639			
355	221491219.961653			
356	233828280.913517			
357	246852516.160400			
358	260602201.310535			
359	275117743.923531			
360	290441802.260072			
361	306619410.645958			
362	323698111.818938			
363	341728096.647253			
364	360762351.630505			
365	380856814.616324			
366	402070539.190453			
367	424465868.223362			
368	448108617.083403			
369	473068267.054948			
370	499418169.529909			
371	527235761.572725			
372	556602793.492326			
373	587605569.089849			
374	620335199.288153			
375	654887869.888503			
376	691365124.241293			
377	729874161.661533			
378	770528152.466080			
379	813446570.558441			
380	858755544.538546			
381	906588228.369344			
382	957085192.689516			
383	1010394837.922320			
384	1066673830.394600			
385	1126087562.747570			
386	1188810639.992610			
387	1255027392.640200			
388	1324932418.410260			
389	1398731154.115710			
390	1476640479.399960			
391	1558889354.102540			
392	1645719491.126050			
393	1737386066.781770			
394	1834158470.701520			
395	1936321097.519590			
396	2044174182.651430			
397	2158034684.625120			
398	2278237216.558730			
399	2405135029.521060			
400	2539101050.665380	1988410346	2.54E+09	9.38790%
401	2680528979.187440			
402	2829834443.328180			
403	2987456221.821560			
404	3153857533.377020			
405	3329527397.986120			
406	3514982074.053950			
407	3710766575.578760			
408	3917456273.838490			
409	4135658588.291300			
410	4366014771.659120			
411	4609201794.440540			
412	4865934334.390880			
413	5136966876.816450			
414	5423095931.855130			
415	5725162375.259460			
416	6044053919.561410			
417	6380707722.880980			
418	6736113143.045450			
419	7111314645.113080			

420	7507414870.845880
421	7925577879.152000
422	8367032567.020760
423	8833076281.003820
424	9325078629.855740
425	9844485509.538700
426	10392823352.420000
427	10971703613.149800
428	11582827504.402200
429	12227990996.397500
430	12909090094.896800
431	13628126413.182500
432	14387213054.396800
433	15188580821.526700
434	16034584773.285800
435	16927711145.157800
436	17870584655.943100
437	18865976221.279100
438	19916811096.804300
439	21026177474.896300
440	22197335560.248100
441	23433727150.953900
442	24738985753.262000
443	26116947259.718700
444	27571661222.085000
445	29107402752.155200
446	30728685085.450200
447	32440272844.709800
448	34247196042.160200
449	36154764861.708500
450	38168585264.505600
451	40294575463.738600
452	42538983317.068900
453	44908404687.829600
454	47409802828.941700
455	50050528846.513800
456	52838343303.264600
457	55781439025.256400
458	58888465178.963200
459	62168552689.431500
460	65631341074.232800
461	69287006772.067600
462	73146293049.271800
463	77220541572.116200
464	81521725737.683100
465	86062485861.272000
466	90856166323.744900
467	95916854787.977500
468	101259423599.668000
469	106899573494.169000
470	112853879737.795000
471	119139840839.190000
472	125775929973.933000
473	132781649273.481000
474	140177587138.014000
475	147985478741.601000
476	156228269907.508000
477	164930184541.356000
478	174116795820.310000
479	183815101347.501000
480	194053602492.557000
481	204862388151.393000
482	216273223171.425000
483	228319641702.074000
484	241037045744.879000
485	254462809192.869000
486	268636387664.912000
487	283599434457.847000
488	299395922957.149000
489	316072275865.863000
490	333677501631.591000

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492	371884406425.387000			
493	392598367863.282000			
494	414466096953.266000			
495	437551858553.563000			
496	461923497074.997000			
497	487652635862.074000			
498	514814887679.592000			
499	543490076923.345000			
500	573762474207.975000	4.49323E+11	5.74E+11	9.38790%
501	605721044021.360000			
502	639459706173.349000			
503	675077611807.205000			
504	712679434784.866000			
505	752375679302.384000			
506	794283004639.526000			
507	838524567997.948000			
508	885230386435.434000			
509	934537718959.887000			
510	986591469905.953000			
511	1041544614779.710000			
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513	1160804066618.080000			
514	1225460853128.710000			
515	1293719022647.980000			
516	1365779172209.470000			
517	1441853072101.540000			
518	1522164288217.600000			
519	1606948839071.320000			
520	1696455889407.590000			
521	1790948482447.590000			
522	1890704312919.920000			
523	1996016543149.560000			
524	2107194664602.990000			
525	2224565407421.380000			
526	2348473700614.750000			
527	2479283685738.990000			
528	2617379787034.660000			
529	2763167841172.490000			
530	2917076289925.790000			
531	3079557439274.660000			
532	3251088788642.260000			
533	3432174434169.630000			
534	3623346550152.880000			
535	3825166952996.400000			
536	4038228752278.300000			
537	4263158093780.200000			
538	4500615999603.760000			
539	4751300310781.690000			
540	5015947738092.230000			
541	5295336027103.960000			
542	5590286243813.650000			
543	5901665187594.080000			
544	6230387938543.070000			
545	6577420546719.920000			
546	6943782871172.210000			
547	7330551577096.510000			
548	7738863299940.780000			
549	8169917985747.490000			
550	8624982417553.620000			
551	9105393938211.360000			
552	9612564380569.730000			
553	10147984216567.500000			
554	10713226937430.300000			
555	11309953677845.100000			
556	11939918097701.100000			
557	12604971535743.100000			
558	13307068450284.000000			
559	14048272162964.800000			
560	14830760922441.900000			
561	15656834305821.900000			

562	16528919976656.200000			
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564	18421522470994.100000			
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567	21674400042871.600000			
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570	25501671642945.400000			
571	26922114753457.500000			
572	28421676545225.100000			
573	30004763928794.100000			
574	31676029279628.000000			
575	33440384110503.200000			
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577	37269391357712.300000			
578	39345296456336.900000			
579	41536829468954.900000			
580	43850430870375.600000			
581	46292899869855.600000			
582	48871414392606.500000			
583	51593552174274.700000			
584	54467313030381.800000			
585	57501142366174.100000			
586	60703955995970.000000			
587	64085166344945.500000			
588	67654710110359.000000			
589	71423077463506.000000			
590	75401342878223.300000			
591	79601197676540.300000			
592	84034984387123.600000			
593	88715733017486.400000			
594	93657199346560.400000			
595	98873905350163.900000			
596	104381181878168.000000			
597	110195213708782.000000			
598	116333087112361.000000			
599	122812840064520.000000			
600	129653515256113.000000	1.01534E+14	1.3E+14	9.38790%
601	136875216055879.000000			
602	144499165590191.000000			
603	152547769113565.000000			
604	161044679853191.000000			
605	170014868521013.000000			
606	179484696697634.000000			
607	189481994303692.000000			
608	200036141386408.000000			
609	211178154461631.000000			
610	222940777665144.000000			
611	235358578981092.000000			
612	248468051830339.000000			
613	262307722317289.000000			
614	276918262450362.000000			
615	292342609668847.000000			
616	308626093027402.000000			
617	325816566409028.000000			
618	343964549158011.000000			
619	363123374546112.000000			
620	383349346508331.000000			
621	404701905108845.000000			
622	427243801223408.000000			
623	451041280951551.000000			
624	476164280300553.000000			
625	502686630713294.000000			
626	530686276044024.000000			
627	560245501619676.000000			
628	591451176059892.000000			
629	624395006566428.000000			
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631	695889789561851.000000			
632	734650850840446.000000			

633	775570903232259.000000			
634	818770202542296.000000			
635	864375702823902.000000			
636	912521429471193.000000			
637	963348873092739.000000			
638	1017007405324000.000000			
639	1073654717800550.000000			
640	1133457285582040.000000			
641	1196590856388960.000000			
642	1263240967089830.000000			
643	1333603488956730.000000			
644	1407885203291620.000000			
645	1486304409114960.000000			
646	1569091564702670.000000			
647	1656489964856610.000000			
648	1748756455899120.000000			
649	1846162190492700.000000			
650	1948993424503140.000000			
651	2057552358247970.000000			
652	2172158024602380.000000			
653	2293147226572730.000000			
654	2420875527092840.000000			
655	2555718293951910.000000			
656	2698071802925030.000000			
657	2848354402347950.000000			
658	3007007742558730.000000			
659	3174498073819260.000000			
660	3351317616530990.000000			
661	3537986007771770.000000			
662	3735051828404650.000000			
663	3943094215246790.000000			
664	4162724563036040.000000			
665	4394588321197150.000000			
666	4639366890687830.000000			
667	4897779626499140.000000			
668	5170585951695140.000000			
669	5458587589204560.000000			
670	5762630917923260.000000			
671	6083609460051580.000000			
672	6422466506976460.000000			
673	6780197891415050.000000			
674	7157854913966870.000000			
675	7556547432674820.000000			
676	7977447124674810.000000			
677	8421790929519200.000000			
678	8890884684293420.000000			
679	9386106961208560.000000			
680	9908913118947880.000000			
681	10460839579673300.000000			
682	11043508344261100.000000			
683	11658631759036400.000000			
684	12308017548014800.000000			
685	12993574125439200.000000			
686	13717316204226100.000000			
687	14481370716801500.000000			
688	15287983065727400.000000			
689	16139523722488400.000000			
690	17038495193831000.000000			
691	17987539376127400.000000			
692	18989445319377700.000000			
693	20047157423667000.000000			
694	21163784092165300.000000			
695	22342606866098900.000000			
696	23587090068540600.000000			
697	24900890985358300.000000			
698	26287870613242800.000000			
699	27752105006400400.000000			
700	29297897255256900.000000	2.29436E+16	2.93E+16	9.38790%
701	30929790132374700.000000			
702	32652579442748000.000000			
703	34471328117709100.000000			

704	36391381093865500.000000
705	38418381020793800.000000
706	40558284843652000.000000
707	42817381309443400.000000
708	45202309448379400.000000
709	47720078084654100.000000
710	50378086433969400.000000
711	53184145848341500.000000
712	56146502772094100.000000
713	59273862976499800.000000
714	62575417144290800.000000
715	66060867879227800.000000
716	69740458220100800.000000
717	73625001742960400.000000
718	77725914340043300.000000
719	82055247768783700.000000
720	86625725069505000.000000
721	91450777955876400.000000
722	96544586288018700.000000
723	101922119744261000.000000
724	107599181814017000.000000
725	113592456241057000.000000
726	119919556053684000.000000
727	126599075325875000.000000
728	133650643821526000.000000
729	141094984682385000.000000
730	148953975329194000.000000
731	157250711755030000.000000
732	166009576399785000.000000
733	175256309805253000.000000
734	185018086261406000.000000
735	195323593666166000.000000
736	206203117833371000.000000
737	217688631496690000.000000
738	229813888271056000.000000
739	242614521847754000.000000
740	256128150714674000.000000
741	270394488709481000.000000
742	285455461730599000.000000
743	301355330948993000.000000
744	318140822882852000.000000
745	335861266717427000.000000
746	354568739273588000.000000
747	374318218051127000.000000
748	395167742796575000.000000
749	417178586070344000.000000
750	440415433314462000.000000
751	464946572950078000.000000
752	490844097063397000.000000
753	518184113269828000.000000
754	547046968378958000.000000
755	577517484517666000.000000
756	609685208405300000.000000
757	643644674513475000.000000
758	679495682883876000.000000
759	717343592420508000.000000
760	757299630518330000.000000
761	799481219938201000.000000
762	844012323888759000.000000
763	891023810329363000.000000
764	940653836564708000.000000
765	993048255261363000.000000
766	1048361043079420000.000000
767	1106754753178940000.000000
768	1168400992931010000.000000
769	1233480928237270000.000000
770	1302185815940090000.000000
771	1374717565887950000.000000
772	1451289334307910000.000000
773	1532126150228860000.000000
774	1617465576796600000.000000

775	1707558409424180000.000000			
776	1802669412829100000.000000			
777	1903078099123680000.000000			
778	2009079549244870000.000000			
779	2120985280137810000.000000			
780	2239124160241490000.000000			
781	2363843375966940000.000000			
782	2495509452008300000.000000			
783	2634509328485160000.000000			
784	2781251498081790000.000000			
785	2936167206524940000.000000			
786	3099711719928380000.000000			
787	3272365662728390000.000000			
788	3454636430142360000.000000			
789	3647059679301290000.000000			
790	3850200903438380000.000000			
791	4064657093759890000.000000			
792	4291058493882320000.000000			
793	4530070451991570000.000000			
794	4782395376167500000.000000			
795	5048774798620030000.000000			
796	5329991554903160000.000000			
797	5626872084511270000.000000			
798	5940288859618550000.000000			
799	6271162949099300000.000000			
800	6620466725364130000.000000	5.18459E+18	6.62E+18	9.38790%

Comparison Group
TWO-STEP
Unbiased Result Revised

Current Dividend Yield	3.62%				
Price/Next Dividend	26.91000935	0	-26.91000935		IRR
		1	1.055100		
Short Run Growth Revised	5.51%	2	1.113236		
		3	1.174575		
Long Run Growth Revised	6.30%	4	1.239294		
		5	1.307580	1.307579536	
Term Short Run	5	6	1.389957		
		7	1.477524		
	10.12%	8	1.570608		
		9	1.669557		
		10	1.774739	1.357270227	1.774739
		11	1.886547		
		12	2.005400		
		13	2.131740		
		14	2.266040		
Years		15	2.408800		
100	9.98939%	16	2.560555		
200	10.11187%	17	2.721869		
300	10.11510%	18	2.893347		
400	10.11519%	19	3.075628		
500	10.11519%	20	3.269393		
600	10.11519%	21	3.475364		
700	10.11519%	22	3.694312		
800	10.11519%	23	3.927054		
		24	4.174458		
		25	4.437449		
		26	4.717009		
		27	5.014180		
		28	5.330074		
		29	5.665868		
		30	6.022818		
		31	6.402255		
		32	6.805597		
		33	7.234350		
		34	7.690114		
		35	8.174591		
		36	8.689591		
		37	9.237035		
		38	9.818968		
		39	10.437563		
		40	11.095129		
		41	11.794123		
		42	12.537152		
		43	13.326993		
		44	14.166593		
		45	15.059089		
		46	16.007811		
		47	17.016304		
		48	18.088331		
		49	19.227896		
		50	20.439253		
		51	21.726926		
		52	23.095722		
		53	24.550753		
		54	26.097450		
		55	27.741590		
		56	29.489310		
		57	31.347136		
		58	33.322006		
		59	35.421292		
		60	37.652834		
		61	40.024962		
		62	42.546535		
		63	45.226966		
		64	48.076265		
		65	51.105070		
		66	54.324689		
		67	57.747145		
		68	61.385215		
		69	65.252483		
		70	69.363390		
		71	73.733283		
		72	78.378480		
		73	83.316324		
		74	88.565253		
		75	94.144864		
		76	100.075990		
		77	106.380778		

78	113.082767			
79	120.206981			
80	127.780021			
81	135.830162			
82	144.387462			
83	153.483872			
84	163.153356			
85	173.432018			
86	184.358235			
87	195.972804			
88	208.319090			
89	221.443193			
90	235.394114			
91	250.223943			
92	265.988052			
93	282.745299			
94	300.558253			
95	319.493423			
96	339.621509			
97	361.017664			
98	383.761776			
99	407.938768			
100	433.638911	331.6348251	433.6389	9.98939%
101	460.958162			
102	489.998526			
103	520.868434			
104	553.683145			
105	588.565183			
106	625.644790			
107	665.060411			
108	706.959217			
109	751.497648			
110	798.842000			
111	849.169046			
112	902.666696			
113	959.534697			
114	1019.985383			
115	1084.244462			
116	1152.551864			
117	1225.162631			
118	1302.347877			
119	1384.395793			
120	1471.612728			
121	1564.324330			
122	1662.876763			
123	1767.637999			
124	1878.999192			
125	1997.376142			
126	2123.210839			
127	2256.973121			
128	2399.162428			
129	2550.309661			
130	2710.979170			
131	2881.770857			
132	3063.322421			
133	3256.311734			
134	3461.459373			
135	3679.531314			
136	3911.341786			
137	4157.756319			
138	4419.694967			
139	4698.135750			
140	4994.118302			
141	5308.747755			
142	5643.198864			
143	5998.720392			
144	6376.639777			
145	6778.368083			
146	7205.405272			
147	7659.345804			
148	8141.884590			
149	8654.823319			
150	9200.077188			
151	9779.682051			
152	10395.802020			
153	11050.737547			
154	11746.934013			
155	12486.990856			
156	13273.671280			
157	14109.912570			
158	14998.837062			
159	15943.763797			
160	16948.220916			
161	18015.958834			

162	19150.964240			
163	20357.474988			
164	21639.995912			
165	23003.315654			
166	24452.524540			
167	25993.033586			
168	27630.594702			
169	29371.322169			
170	31221.715465			
171	33188.683540			
172	35279.570603			
173	37502.183551			
174	39864.821114			
175	42376.304844			
176	45046.012050			
177	47883.910809			
178	50900.597190			
179	54107.334813			
180	57516.096906			
181	61139.611011			
182	64991.406505			
183	69085.865114			
184	73438.274617			
185	78064.885917			
186	82982.973730			
187	88210.901075			
188	93768.187843			
189	99675.583677			
190	105955.145449			
191	112630.319612			
192	119726.029748			
193	127268.769622			
194	135286.702108			
195	143809.764341			
196	152869.779494			
197	162500.575602			
198	172738.111865			
199	183620.612913			
200	195188.711526	149274.8289	195188.7	10.11187%
201	207485.600352			
202	220557.193175			
203	234452.296345			
204	249222.791014			
205	264923.826848			
206	281614.027940			
207	299355.711700			
208	318215.121537			
209	338262.674194			
210	359573.222668			
211	382226.335696			
212	406306.594845			
213	431903.910320			
214	459113.856670			
215	488038.029640			
216	518784.425508			
217	551467.844315			
218	586210.318507			
219	623141.568572			
220	662399.487392			
221	704130.655098			
222	748490.886369			
223	795645.812211			
224	845771.498380			
225	899055.102778			
226	955695.574253			
227	1015904.395431			
228	1079906.372343			
229	1147940.473801			
230	1220260.723650			
231	1297137.149240			
232	1378856.789642			
233	1465724.767390			
234	1558065.427735			
235	1656223.549682			
236	1760565.633312			
237	1871481.268211			
238	1989384.588108			
239	2114715.817159			
240	2247942.913640			
241	2389563.317199			
242	2540105.806183			
243	2700132.471973			
244	2870240.817707			
245	3051065.989222			

246	3243283.146543			
247	3447609.984776			
248	3664809.413817			
249	3895692.406887			
250	4141121.028521			
251	4402011.653318			
252	4679338.387477			
253	4974136.705888			
254	5287507.318359			
255	5620620.279415			
256	5974719.357018			
257	6351126.676510			
258	6751247.657131			
259	7176576.259530			
260	7628700.563880			
261	8109308.699405			
262	8620195.147467			
263	9163267.441758			
264	9740553.290588			
265	10354208.147895			
266	11006523.261213			
267	11699934.226669			
268	12437030.082949			
269	13220562.978175			
270	14053458.445800			
271	14938826.327886			
272	15879972.386543			
273	16880410.646895			
274	17943876.517649			
275	19074340.738261			
276	20276024.204771			
277	21553413.729672			
278	22911278.794641			
279	24354689.358704			
280	25889034.788302			
281	27520043.979965			
282	29253806.750703			
283	31096796.575997			
284	33055894.760285			
285	35138416.130183			
286	37352136.346384			
287	39705320.936207			
288	42206756.155188			
289	44865781.792965			
290	47692326.045921			
291	50696942.586814			
292	53890849.969784			
293	57285973.517880			
294	60894989.849506			
295	64731374.210025			
296	68809450.785257			
297	73144446.184728			
298	77752546.294366			
299	82650956.710911			
300	87857966.983698	67191298.54	87857967	10.11510%
301	93393018.903671			
302	99276779.094603			
303	105531216.177563			
304	112179682.796749			
305	119247002.812944			
306	126759563.990160			
307	134745416.521540			
308	143234377.762397			
309	152258143.561428			
310	161850406.605798			
311	172046982.221963			
312	182885942.101946			
313	194407756.454369			
314	206655445.110994			
315	219674738.152987			
316	233514246.656625			
317	248225644.195992			
318	263863859.780340			
319	280487282.946501			
320	298157981.772131			
321	316941934.623775			
322	336909276.505073			
323	358134560.924893			
324	380697038.263161			
325	404680951.673740			
326	430175851.629185			
327	457276930.281824			
328	486085376.889579			
329	516708755.633622			

330	549261407.238541			
331	583864875.894569			
332	620648363.075926			
333	659749209.949710			
334	701313410.176541			
335	745496155.017663			
336	792462412.783776			
337	842387544.789154			
338	895457960.110871			
339	951871811.597856			
340	1011839735.728520			
341	1075585639.079420			
342	1143347534.341420			
343	1215378429.004930			
344	1291947270.032240			
345	1373339948.044270			
346	1459860364.771060			
347	1551831567.751640			
348	1649596956.519990			
349	1753521564.780750			
350	1863993423.361940			
351	1981425009.033740			
352	2106254784.602860			
353	2238948836.032840			
354	2380002612.702910			
355	2529942777.303200			
356	2689329172.273300			
357	2858756910.126520			
358	3038858595.464490			
359	3230306686.978750			
360	3433816008.258410			
361	3650146416.778690			
362	3880105641.035750			
363	4124552296.421000			
364	4384399091.095520			
365	4660616233.834540			
366	4954235056.566110			
367	5266351865.129780			
368	5598132032.632960			
369	5950814350.688830			
370	6325715654.782230			
371	6724235741.033510			
372	7147862592.718620			
373	7598177936.059890			
374	8076863146.031660			
375	8585705524.231660			
376	9126604972.258250			
377	9701581085.510520			
378	10312780693.897700			
379	10962485877.613200			
380	11653122487.902900			
381	12387269204.640800			
382	13167667164.533100			
383	13997230195.898700			
384	14879055698.240300			
385	15816436207.229500			
386	16812871688.284900			
387	17872082604.646900			
388	18998023808.739600			
389	20194899308.690200			
390	21467177965.137700			
391	22819610176.941400			
392	24257245618.088700			
393	25785452092.028300			
394	27409935573.826000			
395	29136761514.977100			
396	30972377490.420600			
397	32923637272.317100			
398	34997826420.473100			
399	37202689484.962900			
400	39546458922.515600	30244017919	3.95E+10	10.11519%
401	42037885834.634000			
402	44686272642.216000			
403	47501507818.675600			
404	50494102811.252200			
405	53675231288.361000			
406	57056770859.527800			
407	60651347423.678000			
408	64472382311.369700			
409	68534142396.986000			
410	72851793367.996100			
411	77441456350.179900			
412	82320268100.241200			
413	87506444990.556400			

414	93019351024.961400
415	98879570139.534000
416	105108983058.325000
417	111730848990.999000
418	118769892477.432000
419	126252395703.510000
420	134206296632.831000
421	142661293320.700000
422	151648954799.904000
423	161202838952.298000
424	171358617806.292000
425	182154210728.089000
426	193629926003.958000
427	205828611342.208000
428	218795813856.767000
429	232579950129.743000
430	247232486987.917000
431	262808133668.156000
432	279365046089.250000
433	296965043992.872000
434	315673841764.423000
435	335561293795.582000
436	356701655304.704000
437	379173859588.900000
438	403061812743.001000
439	428454706945.810000
440	455447353483.396000
441	484140536752.850000
442	514641390568.279000
443	547063798174.081000
444	581528817459.048000
445	618165132958.968000
446	657109536335.383000
447	698507437124.512000
448	742513405663.356000
449	789291750220.147000
450	839017130484.016000
451	891875209704.510000
452	948063347915.894000
453	1007791338834.590000
454	1071282193181.170000
455	1138772971351.590000
456	1210515668546.740000
457	1286778155665.180000
458	1367845179472.090000
459	1454019425778.830000
460	1545622649602.900000
461	1642996876527.880000
462	1746505679749.140000
463	1856535537573.330000
464	1973497276440.450000
465	2097827604856.200000
466	2229990743962.140000
467	2370480160831.750000
468	2519820410964.150000
469	2678569096854.900000
470	2847318949956.750000
471	3026700043804.030000
472	3217382146563.680000
473	3420077221797.190000
474	3635542086770.420000
475	3864581238236.950000
476	4108049856245.880000
477	4366856997189.370000
478	4641968988012.300000
479	4934413034257.080000
480	5245281055415.270000
481	5575733761906.430000
482	5927004988906.540000
483	6300406303207.650000
484	6697331900309.730000
485	7119263810029.250000
486	7567777430061.090000
487	8044547408154.940000
488	8551353894868.700000
489	9090089190245.420000
490	9662764809230.880000
491	10271518992212.400000
492	10918624688721.800000
493	11606498044111.300000
494	12337707420890.300000
495	13114982988406.400000
496	13941226916676.000000
497	14819524212426.600000

498	15753154237809.400000			
499	16745602954791.400000			
500	17800575940943.300000	1.36134E+13	1.78E+13	10.11519%
501	18922012225222.700000			
502	20114098995411.800000			
503	21381287232122.700000			
504	22728308327746.400000			
505	24160191752394.400000			
506	25682283832795.300000			
507	27300267714261.400000			
508	29020184580259.900000			
509	30848456208816.200000			
510	32791908949971.600000			
511	34857799213819.900000			
512	37053840564290.500000			
513	39388232519840.800000			
514	41869691168590.800000			
515	44507481712212.000000			
516	47311453060081.300000			
517	50292074602866.500000			
518	53460475302847.100000			
519	56828485246926.400000			
520	60408679817482.800000			
521	64214426645984.200000			
522	68259935524681.200000			
523	72560311462736.100000			
524	77131611084888.500000			
525	81990902583236.400000			
526	87156329445980.300000			
527	92647178201077.100000			
528	98483950427744.900000			
529	104688439304693.000000			
530	111283810980888.000000			
531	118294691072684.000000			
532	125747256610264.000000			
533	133669333776710.000000			
534	142090501804643.000000			
535	151042203418335.000000			
536	160557862233690.000000			
537	170673007554413.000000			
538	181425407030341.000000			
539	192855207673252.000000			
540	205005085756667.000000			
541	217920406159337.000000			
542	231649391747376.000000			
543	246243303427460.000000			
544	261756631543390.000000			
545	278247299330624.000000			
546	295776879188453.000000			
547	314410822577326.000000			
548	334218704399697.000000			
549	355274482776878.000000			
550	377656775191821.000000			
551	401449152028906.000000			
552	426740448606727.000000			
553	453625096868951.000000			
554	482203477971695.000000			
555	512582297083912.000000			
556	544874981800198.000000			
557	579202105653611.000000			
558	615691838309788.000000			
559	654480424123305.000000			
560	695712690843073.000000			
561	739542590366186.000000			
562	78613377359256.000000			
563	835660201293489.000000			
564	888306793974979.000000			
565	944270121995402.000000			
566	1003759139681110.000000			
567	1066995965481020.000000			
568	1134216711306330.000000			
569	1205672364118630.000000			
570	1281629723058100.000000			
571	1362372395610760.000000			
572	1448201856534240.000000			
573	1539438573495890.000000			
574	1636423203626130.000000			
575	1739517865454580.000000			
576	1849107490978220.000000			
577	1965601262909850.000000			
578	2089434142473170.000000			
579	2221068493448980.000000			
580	2360995808536260.000000			
581	2509738544474050.000000			

582	2667852072775910.000000			
583	2835926753360790.000000			
584	3014590138822520.000000			
585	3204509317568340.000000			
586	3406393404575150.000000			
587	3620996189063380.000000			
588	3849118948974380.000000			
589	4091613442759760.000000			
590	4349385089653630.000000			
591	4623396350301800.000000			
592	4914670320370820.000000			
593	5224294550554180.000000			
594	5553425107239090.000000			
595	5903290888995150.000000			
596	6275198215001850.000000			
597	6670535702546960.000000			
598	7090779451807420.000000			
599	7537498557271290.000000			
600	8012360966379380.000000	6.12763E+15	8.01E+15	10.11519%
601	8517139707261280.000000			
602	9053719508818740.000000			
603	9624103837874320.000000			
604	10230422379660400.000000			
605	10874938989579000.000000			
606	11560060145922500.000000			
607	12288343935115600.000000			
608	13062509603027900.000000			
609	13885447708018600.000000			
610	14760230913623800.000000			
611	15690125461182100.000000			
612	16678603365236600.000000			
613	17729355377246500.000000			
614	18846304766013000.000000			
615	20033621966271800.000000			
616	21295740150147000.000000			
617	22637371779606200.000000			
618	24063526201721400.000000			
619	25579528352429900.000000			
620	27191038638632900.000000			
621	28904074072866800.000000			
622	30725030739457400.000000			
623	32660707676043200.000000			
624	34718332259633900.000000			
625	36905587191990900.000000			
626	39230639185086300.000000			
627	41702169453746700.000000			
628	44329406129332800.000000			
629	47122158715480700.000000			
630	50090854714556000.000000			
631	53246578561573100.000000			
632	56601113010952200.000000			
633	60166983130642100.000000			
634	63957503067872600.000000			
635	67986825761148600.000000			
636	72269995784100900.000000			
637	76823005518499300.000000			
638	81662854866164700.000000			
639	86807614722733100.000000			
640	92276494450265300.000000			
641	98089913600632000.000000			
642	104269578157472000.000000			
643	110838561581392000.000000			
644	117821390961020000.000000			
645	125244138591564000.000000			
646	133134519322833000.000000			
647	141521994040172000.000000			
648	150437879664702000.000000			
649	159915466083579000.000000			
650	169990140446844000.000000			
651	180699519294995000.000000			
652	192083589010580000.000000			
653	204184855118246000.000000			
654	217048500990696000.000000			
655	230722556553110000.000000			
656	245258077615956000.000000			
657	260709336505761000.000000			
658	277134024705624000.000000			
659	294593468262078000.000000			
660	313152856762589000.000000			
661	332881486738632000.000000			
662	353853020403166000.000000			
663	376145760688565000.000000			
664	399842943611945000.000000			
665	425033049059497000.000000			

666	451810131150246000.000000			
667	480274169412711000.000000			
668	510531442085712000.000000			
669	542694922937112000.000000			
670	576884703082150000.000000			
671	613228439376325000.000000			
672	651861831057033000.000000			
673	692929126413626000.000000			
674	736583661377685000.000000			
675	782988432044479000.000000			
676	832316703263281000.000000			
677	884752655568868000.000000			
678	940492072869706000.000000			
679	999743073460498000.000000			
680	1062726887088510000.000000			
681	1129678680975090000.000000			
682	1200848437876520000.000000			
683	1276501889462740000.000000			
684	1356921508498890000.000000			
685	1442407563534320000.000000			
686	1533279240036980000.000000			
687	1629875832159310000.000000			
688	1732558009585350000.000000			
689	1841709164189220000.000000			
690	1957736841533140000.000000			
691	2081074262549730000.000000			
692	2212181941090360000.000000			
693	2351549403379060000.000000			
694	2499697015791940000.000000			
695	2657177927786830000.000000			
696	2824580137237400000.000000			
697	3002528685883360000.000000			
698	3191687993094010000.000000			
699	3392764336658930000.000000			
700	3606508489868440000.000000	2.75816E+18	3.61E+18	10.11519%
701	3833718524730150000.000000			
702	4075242791788150000.000000			
703	4331983087670810000.000000			
704	4604898022194070000.000000			
705	4895006597592290000.000000			
706	5203392013240610000.000000			
707	5531205710074770000.000000			
708	5879671669809480000.000000			
709	6250090985007470000.000000			
710	6643846717062940000.000000			
711	7062409060237910000.000000			
712	7507340831032900000.000000			
713	7980303303879700000.000000			
714	8483062411501410000.000000			
715	9017495343426000000.000000			
716	9585597550061830000.000000			
717	10189490195715700000.000000			
718	10831428078045800000.000000			
719	11513808046962700000.000000			
720	12239177953921400000.000000			
721	13010246165018400000.000000			
722	13829891673414600000.000000			
723	14701174848839700000.000000			
724	15627348864316600000.000000			
725	16611871842768500000.000000			
726	17658419768862900000.000000			
727	18770900214301300000.000000			
728	19953466927802300000.000000			
729	21210535344253800000.000000			
730	22546799070941800000.000000			
731	23967247412411100000.000000			
732	25477183999393000000.000000			
733	27082246591354800000.000000			
734	28788428126610100000.000000			
735	30602099098586600000.000000			
736	32530031341797500000.000000			
737	34579423316330800000.000000			
738	36757926985259600000.000000			
739	39073676385331000000.000000			
740	41535317997606800000.000000			
741	44152043031456000000.000000			
742	46933621742437800000.000000			
743	49890439912211400000.000000			
744	53033537626680700000.000000			
745	56374650497161600000.000000			
746	59926253478482700000.000000			
747	63701607447627100000.000000			
748	67714808716827600000.000000			
749	71980841665987800000.000000			

750	76515634690945000000.000000			
751	81336119676474500000.000000			
752	86460295216092400000.000000			
753	91907293814706200000.000000			
754	97697453325032700000.000000			
755	10385239288451000000.000000			
756	11039509363623400000.000000			
757	11734998453531700000.000000			
758	12474303356104200000.000000			
759	13260184467538700000.000000			
760	14095576088993700000.000000			
761	14983597382600300000.000000			
762	15927564017704100000.000000			
763	16931000550819400000.000000			
764	17997653585521000000.000000			
765	19131505761408900000.000000			
766	20336790624377600000.000000			
767	21618008433713400000.000000			
768	22979942965037400000.000000			
769	24427679371834700000.000000			
770	25966623172260300000.000000			
771	27602520432112700000.000000			
772	29341479219335800000.000000			
773	31189992410153900000.000000			
774	33154961931993600000.000000			
775	35243724533709200000.000000			
776	37464079179332900000.000000			
777	39824316167630900000.000000			
778	42333248086191600000.000000			
779	45000242715621700000.000000			
780	47835258006705900000.000000			
781	50848879261128300000.000000			
782	54052358654579400000.000000			
783	57457657249817900000.000000			
784	61077489656564000000.000000			
785	64925371504919500000.000000			
786	69015669909729400000.000000			
787	73363657114042400000.000000			
788	77985567512227000000.000000			
789	82898658265497300000.000000			
790	88121273736223700000.000000			
791	93672913981605800000.000000			
792	99574307562446900000.000000			
793	105847488938881000000.000000			
794	112515880742031000000.000000			
795	119604381228778000000.000000			
796	127139457246192000000.000000			
797	135149243052702000000.000000			
798	143663645365022000000.000000			
799	152714455023018000000.000000			
800	162335465689468000000.000000	1.2415E+21	1.62E+21	10.11519%

NiSource
TWO-STEP
Biased Result

Bold indicates bias

Current Dividend Yield	4.08%				
Price/Next Dividend	24.046901	0	-24.04690108		<u>IRR</u>
		1	1.000000		
Short Run Growth proposed by Tim	3.85%	2	1.038500		
		3	1.078482		
Long Run Growth proposed by Tim	5.57%	4	1.120004		
		5	1.163124	1.207904236	
Term Short Run		6	1.227910		
		7	1.296305		
	9.49%	8	1.368509		
		9	1.444735		
	24.046836	10	1.525206	1.31130165	1.583927
		11	1.610160		
		12	1.699846		
<u>Years</u>		13	1.794528		
100	9.37301%	14	1.894483		
200	9.48402%	15	2.000006		
300	9.48665%	16	2.111406		
400	9.48672%	17	2.229011		
500	9.48672%	18	2.353167		
600	9.48672%	19	2.484239		
700	9.48672%	20	2.622611		
800	9.48672%	21	2.768690		
		22	2.922906		
		23	3.085712		
		24	3.257586		
		25	3.439034		
		26	3.630588		
		27	3.832812		
		28	4.046299		
		29	4.271678		
		30	4.509611		
		31	4.760796		
		32	5.025972		
		33	5.305919		
		34	5.601459		
		35	5.913460		
		36	6.242840		
		37	6.590566		
		38	6.957660		
		39	7.345202		
		40	7.754330		
		41	8.186246		
		42	8.642220		
		43	9.123591		
		44	9.631775		
		45	10.168265		
		46	10.734638		
		47	11.332557		
		48	11.963780		
		49	12.630163		
		50	13.333663		
		51	14.076348		
		52	14.860401		
		53	15.688125		
		54	16.561953		
		55	17.484454		
		56	18.458338		
		57	19.486468		
		58	20.571864		
		59	21.717717		
		60	22.927394		
		61	24.204450		
		62	25.552637		
		63	26.975919		
		64	28.478478		
		65	30.064729		
		66	31.739335		
		67	33.507216		
		68	35.373567		
		69	37.343875		
		70	39.423929		
		71	41.619842		
		72	43.938067		
		73	46.385417		
		74	48.969085		
		75	51.696663		
		76	54.576167		
		77	57.616060		

78	60.825274			
79	64.213242			
80	67.789920			
81	71.565818			
82	75.552034			
83	79.760283			
84	84.202930			
85	88.893034			
86	93.844376			
87	99.071507			
88	104.589790			
89	110.415442			
90	116.565582			
91	123.058285			
92	129.912631			
93	137.148765			
94	144.787951			
95	152.852640			
96	161.366532			
97	170.354648			
98	179.843402			
99	189.860679			
100	200.435919	172.3255002	208.1527	9.37301%
101	211.600199			
102	223.386331			
103	235.828949			
104	248.964622			
105	262.831951			
106	277.471691			
107	292.926864			
108	309.242890			
109	326.467719			
110	344.651971			
111	363.849086			
112	384.115480			
113	405.510712			
114	428.097659			
115	451.942699			
116	477.115907			
117	503.691263			
118	531.746866			
119	561.365167			
120	592.633207			
121	625.642876			
122	660.491184			
123	697.280543			
124	736.119070			
125	777.120902			
126	820.406536			
127	866.103180			
128	914.345127			
129	965.274151			
130	1019.039921			
131	1075.800445			
132	1135.722529			
133	1198.982274			
134	1265.765587			
135	1336.268730			
136	1410.698898			
137	1489.274827			
138	1572.227435			
139	1659.800503			
140	1752.251391			
141	1849.851793			
142	1952.888538			
143	2061.664430			
144	2176.499139			
145	2297.730141			
146	2425.713709			
147	2560.825963			
148	2703.463969			
149	2854.046912			
150	3013.017325			
151	3180.842390			
152	3358.015311			
153	3545.056764			
154	3742.516426			
155	3950.974591			
156	4171.043876			
157	4403.371020			
158	4648.638785			
159	4907.567966			
160	5180.919501			
161	5469.496718			

162	5774.147685			
163	6095.767711			
164	6435.301972			
165	6793.748292			
166	7172.160072			
167	7571.649388			
168	7993.390259			
169	8438.622096			
170	8908.653347			
171	9404.865339			
172	9928.716338			
173	10481.745838			
174	11065.579081			
175	11681.931836			
176	12332.615439			
177	13019.542119			
178	13744.730615			
179	14510.312111			
180	15318.536495			
181	16171.778978			
182	17072.547067			
183	18023.487939			
184	19027.396217			
185	20087.222186			
186	21206.080462			
187	22387.259144			
188	23634.229478			
189	24950.656060			
190	26340.407603			
191	27807.568306			
192	29356.449861			
193	30991.604118			
194	32717.836467			
195	34540.219958			
196	36464.110210			
197	38495.161149			
198	40639.341625			
199	42902.952953			
200	45292.647433	38940.5161	47036.41	9.48402%
201	47815.447895			
202	50478.768343			
203	53290.435739			
204	56258.713010			
205	59392.323325			
206	62700.475734			
207	66192.892232			
208	69879.836329			
209	73772.143213			
210	77881.251590			
211	82219.237304			
212	86798.848821			
213	91633.544701			
214	96737.533140			
215	102125.813736			
216	107814.221562			
217	113819.473702			
218	120159.218388			
219	126852.086852			
220	133917.748090			
221	141376.966658			
222	149251.663701			
223	157564.981369			
224	166341.350831			
225	175606.564073			
226	185387.849692			
227	195713.952919			
228	206615.220097			
229	218123.687856			
230	230273.177270			
231	243099.393244			
232	256640.029448			
233	270934.879088			
234	286025.951853			
235	301957.597371			
236	318776.635545			
237	336532.494145			
238	355277.354069			
239	375066.302690			
240	395957.495750			
241	418012.328263			
242	441295.614948			
243	465875.780700			
244	491825.061685			
245	519219.717621			

246	548140.255893			
247	578671.668146			
248	610903.680062			
249	644931.015041			
250	680853.672579			
251	718777.222141			
252	758813.113415			
253	801079.003832			
254	845699.104345			
255	892804.544457			
256	942533.757584			
257	995032.887881			
258	1050456.219736			
259	1108966.631175			
260	1170736.072532			
261	1235946.071772			
262	1304788.267969			
263	1377464.974495			
264	1454189.773575			
265	1535188.143963			
266	1620698.123582			
267	1710971.009065			
268	1806272.094270			
269	1906881.449921			
270	2013094.746681			
271	2125224.124072			
272	2243599.107782			
273	2368567.578086			
274	2500496.792185			
275	2639774.463510			
276	2786809.901127			
277	2942035.212620			
278	3105906.573963			
279	3278905.570133			
280	3461540.610389			
281	3654348.422388			
282	3857895.629515			
283	4072780.416079			
284	4299634.285254			
285	4539123.914943			
286	4791953.117005			
287	5058864.905623			
288	5340643.680866			
289	5638117.533890			
290	5952160.680528			
291	6283696.030433			
292	6633697.899328			
293	7003194.872321			
294	7393272.826709			
295	7805078.123157			
296	8239820.974617			
297	8698779.002903			
298	9183300.993365			
299	9694810.858695			
300	10234811.823524	8799416.179	10628852	9.48665%
301	10804890.842095			
302	11406723.261999			
303	12042077.747693			
304	12712821.478239			
305	13420925.634577			
306	14168471.192423			
307	14957655.037841			
308	15790796.423449			
309	16670343.784235			
310	17598881.933017			
311	18579139.656686			
312	19613997.735563			
313	20706497.409434			
314	21859849.315139			
315	23077442.921993			
316	24362856.492748			
317	25719867.599394			
318	27152464.224680			
319	28664856.481995			
320	30261488.988042			
321	31947053.924676			
322	33726504.828280			
323	35605071.147215			
324	37588273.610115			
325	39681940.450199			
326	41892224.533275			
327	44225621.439778			
328	46688988.553974			
329	49289565.216430			

330	52034993.998985			
331	54933343.164729			
332	57993130.379004			
333	61223347.741115			
334	64633488.210295			
335	68233573.503608			
336	72034183.547759			
337	76046487.571369			
338	80282276.929094			
339	84753999.754045			
340	89474797.540345			
341	94458543.763343			
342	99719884.650961			
343	105274282.226019			
344	111138059.746009			
345	117328449.673861			
346	123863644.320695			
347	130762849.309358			
348	138046340.015889			
349	145735521.154774			
350	153852989.683095			
351	162422601.208444			
352	171469540.095754			
353	181020393.479088			
354	191103229.395873			
355	201747679.273223			
356	212985025.008741			
357	224848290.901728			
358	237372340.704955			
359	250593980.082221			
360	264552064.772800			
361	279287614.780645			
362	294843934.923927			
363	311266742.099190			
364	328604299.634115			
365	346907559.123735			
366	366230310.166927			
367	386629338.443225			
368	408164592.594513			
369	430899360.402027			
370	454900454.776420			
371	480238410.107467			
372	506987689.550453			
373	535226903.858413			
374	565039042.403327			
375	596511717.065192			
376	629737419.705723			
377	664813793.983332			
378	701843922.308204			
379	740936628.780771			
380	782206799.003860			
381	825775717.708375			
382	871771425.184731			
383	920329093.567521			
384	971591424.079232			
385	1025709066.400440			
386	1082841061.398950			
387	1143155308.518870			
388	1206829059.203370			
389	1274049437.801000			
390	1345013991.486520			
391	1419931270.812320			
392	1499021442.596560			
393	1582516936.949190			
394	1670663130.337260			
395	1763719066.697050			
396	1861958218.712070			
397	1965669291.494330			
398	2075157071.030570			
399	2190743319.886970			
400	2312767722.804680	1988410346	2.4E+09	9.48672%
401	2441588884.964900			
402	2577585385.857440			
403	2721156891.849700			
404	2872725330.725730			
405	3032736131.647150			
406	3201659534.179900			
407	3379991970.233720			
408	3568257522.975740			
409	3767009467.005490			
410	3976831894.317690			
411	4198341430.831190			
412	4432189048.528490			
413	4679061978.531520			

414	4939685730.735730
415	5214826225.937710
416	5505292046.722440
417	5811936813.724880
418	6135661694.249360
419	6477418050.619050
420	6838210236.038530
421	7219098546.185880
422	7621202335.208430
423	8045703305.279540
424	8493848979.383610
425	8966956367.535280
426	9466415837.207000
427	9993695199.339430
428	10550344021.942600
429	11137998183.964800
430	11758384682.811700
431	12413326709.644300
432	13104749007.371500
433	13834683527.082100
434	14605275399.540500
435	15418789239.295000
436	16277615799.923700
437	17184278999.979400
438	18141443340.278300
439	19151921734.331800
440	20218683774.934100
441	21344864461.197900
442	22533773411.686600
443	23788904590.717600
444	25113946576.420600
445	26512793400.727200
446	27989555993.147700
447	29548574261.966000
448	31194429848.357500
449	32931959590.911000
450	34766269740.124800
451	36702750964.649700
452	38747094193.380700
453	40905307339.952000
454	43183732958.787400
455	45589066884.591800
456	48128377910.063600
457	50809128559.654200
458	53639197020.426900
459	56626900294.464700
460	59781018640.866400
461	63110821379.162600
462	66626094129.982000
463	70337167573.022000
464	74254947806.839300
465	78390948399.680300
466	82757324225.542500
467	87366907184.905200
468	92233243915.104400
469	97370635601.175800
470	102794180004.161000
471	108519815830.393000
472	114564369572.146000
473	120945604957.314000
474	127682275153.437000
475	134794177879.483000
476	142302213587.371000
477	150228446884.187000
478	158596171375.636000
479	167429978121.259000
480	176755827902.614000
481	186601127516.789000
482	196994810319.474000
483	207967421254.269000
484	219551206618.132000
485	231780208826.762000
486	244690366458.412000
487	258319619870.146000
488	272708022696.913000
489	287897859561.131000
490	303933770338.686000
491	320862881346.551000
492	338734943837.554000
493	357602480209.306000
494	377520938356.964000
495	398548854623.447000
496	420748025825.973000
497	444183690864.480000

498	468924722445.632000			
499	495043829485.853000			
500	522617770788.215000	4.49323E+11	5.43E+11	9.48672%
501	551727580621.119000			
502	582458806861.716000			
503	614901762403.913000			
504	649151790569.811000			
505	685309545304.550000			
506	723481286978.013000			
507	763779194662.689000			
508	806321695805.401000			
509	851233814261.761000			
510	898647537716.141000			
511	948702205566.931000			
512	1001544918417.010000			
513	1057330970372.840000			
514	1116224305422.600000			
515	1178397999234.640000			
516	1244034767792.010000			
517	1313327504358.030000			
518	1386479846350.770000			
519	1463706773792.510000			
520	1545235241092.750000			
521	1631304844021.620000			
522	1722168523833.620000			
523	1818093310611.150000			
524	1919361108012.190000			
525	2026269521728.470000			
526	2139132734088.750000			
527	2258282427377.490000			
528	2384068758582.420000			
529	2516861388435.460000			
530	2657050567771.320000			
531	2805048284396.180000			
532	2961289473837.050000			
533	3126233297529.770000			
534	3300364492202.180000			
535	3484194794417.840000			
536	3678264444466.910000			
537	3883143774023.720000			
538	4099434882236.840000			
539	4327773405177.430000			
540	4568830383845.820000			
541	4823314236226.030000			
542	5091972839183.820000			
543	5375595726326.360000			
544	5675016408282.740000			
545	5991114822224.090000			
546	6324819917821.970000			
547	6677112387244.650000			
548	7049027547214.180000			
549	7441658381594.010000			
550	7856158753448.800000			
551	8293746796015.900000			
552	8755708492553.980000			
553	9243401455589.240000			
554	9758258916665.560000			
555	10301793938323.800000			
556	10875603860688.500000			
557	11481374995728.800000			
558	12120887582990.900000			
559	12796021021363.500000			
560	13508759392253.500000			
561	14261197290402.000000			
562	15055545979477.400000			
563	15894139890534.300000			
564	16779443482437.000000			
565	17714058484408.800000			
566	18700731541990.300000			
567	19742362288879.200000			
568	20842011868369.800000			
569	22002911929438.000000			
570	23228474123907.700000			
571	24522300132609.300000			
572	25888192249995.700000			
573	27330164558320.400000			
574	28852454724218.900000			
575	30459536452357.900000			
576	32156132632754.200000			
577	33947229220398.600000			
578	35838089887974.800000			
579	37834271494735.000000			
580	39941640416991.800000			
581	42166389788218.200000			

582	44515057699422.000000			
583	46994546413279.800000			
584	49612142648499.500000			
585	52375538994020.900000			
586	55292856515987.900000			
587	58372668623928.400000			
588	61624026266281.200000			
589	65056484529313.100000			
590	68680130717595.800000			
591	72505613998565.900000			
592	76544176698286.000000			
593	80807687340380.600000			
594	85308675525239.800000			
595	90060368751995.700000			
596	95076731291481.800000			
597	100372505224417.000000			
598	105963253765417.000000			
599	111865407000151.000000			
600	118096310170060.000000	1.01534E+14	1.23E+14	9.48672%
601	124674274646532.000000			
602	131618631744344.000000			
603	138949789532504.000000			
604	146689292809464.000000			
605	154859886418951.000000			
606	163485582092487.000000			
607	172591729015039.000000			
608	182205088321176.000000			
609	192353911740666.000000			
610	203068024624621.000000			
611	214378913596212.000000			
612	226319819083521.000000			
613	238925833006473.000000			
614	252234001904934.000000			
615	266283435811039.000000			
616	281115423185714.000000			
617	296773552257158.000000			
618	313303839117882.000000			
619	330754862956748.000000			
620	349177908823439.000000			
621	368627118344904.000000			
622	389159648836715.000000			
623	410835841276920.000000			
624	433719397636045.000000			
625	457877568084373.000000			
626	483381348626672.000000			
627	510305689745178.000000			
628	538729716663984.000000			
629	568736961882168.000000			
630	600415610659005.000000			
631	633858760172712.000000			
632	669164693114332.000000			
633	706437166520800.000000			
634	745785716696009.000000			
635	787325981115977.000000			
636	831180038264137.000000			
637	877476766395449.000000			
638	92635222283676.000000			
639	977950041064877.000000			
640	1032421858352190.000000			
641	1089927755862410.000000			
642	1150636731863940.000000			
643	1214727197828770.000000			
644	1282387502747830.000000			
645	1353816486650880.000000			
646	1429224064957340.000000			
647	1508831845375460.000000			
648	1592873779162870.000000			
649	1681596848662250.000000			
650	1775261793132730.000000			
651	1874143875010230.000000			
652	1978533688848300.000000			
653	2088738015317150.000000			
654	2205080722770310.000000			
655	2327903719028620.000000			
656	2457567956178510.000000			
657	2594454491337660.000000			
658	2738965606505160.000000			
659	2891525990787500.000000			
660	3052583988474370.000000			
661	3222612916632390.000000			
662	3402112456088810.000000			
663	3591610119892960.000000			
664	3791662803571000.000000			
665	4002858421729900.000000			

666	4225817635820260.000000			
667	4461195678135450.000000			
668	4709684277407590.000000			
669	4972013691659190.000000			
670	5248954854284610.000000			
671	5541321639668270.000000			
672	5849973254997790.000000			
673	6175816765301170.000000			
674	6519809759128440.000000			
675	6882963162711900.000000			
676	7266344210874950.000000			
677	7671079583420680.000000			
678	8098358716217220.000000			
679	8549437296710520.000000			
680	9025640954137290.000000			
681	9528369155282740.000000			
682	10059099317232000.000000			
683	10619391149201800.000000			
684	11210891236212400.000000			
685	11835337878069400.000000			
686	12494566197877900.000000			
687	13190513535099600.000000			
688	13925225139004700.000000			
689	14700860179247300.000000			
690	15519698091231300.000000			
691	16384145274912900.000000			
692	17296742166725600.000000			
693	18260170705412200.000000			
694	19277262213703700.000000			
695	20351005719007000.000000			
696	21484556737555600.000000			
697	22681246547837500.000000			
698	23944591980552000.000000			
699	25278305753868800.000000			
700	26686307384359300.000000	2.29436E+16	2.77E+16	9.48672%
701	28172734705668100.000000			
702	29741956028773800.000000			
703	31398582979576500.000000			
704	33147484051538900.000000			
705	34993798913209700.000000			
706	36942953512675400.000000			
707	39000676023331500.000000			
708	41173013677831000.000000			
709	43466350539686200.000000			
710	45887426264746800.000000			
711	48443355907693200.000000			
712	51141650831751700.000000			
713	53990240783080200.000000			
714	56997497194697800.000000			
715	60172257788442500.000000			
716	63523852547258800.000000			
717	67062131134141100.000000			
718	70797491838312700.000000			
719	74740912133706800.000000			
720	78903980939554200.000000			
721	83298932677887400.000000			
722	87938683228045800.000000			
723	92836867883847900.000000			
724	98007881424978300.000000			
725	103466920420350000.000000			
726	109230027887763000.000000			
727	115314140441111000.000000			
728	121737138063681000.000000			
729	128517896653828000.000000			
730	135676343497447000.000000			
731	143233515830254000.000000			
732	151211622662000000.000000			
733	159634110044273000.000000			
734	168525729973739000.000000			
735	177912613133276000.000000			
736	187822345684800000.000000			
737	198284050339443000.000000			
738	209328471943350000.000000			
739	220988067830595000.000000			
740	233297103208759000.000000			
741	246291751857487000.000000			
742	260010202435949000.000000			
743	274492770711631000.000000			
744	289782018040269000.000000			
745	305922876445112000.000000			
746	322962780663105000.000000			
747	340951807546040000.000000			
748	359942823226354000.000000			
749	379991638480062000.000000			

750	401157172743402000.000000			
751	423501627265209000.000000			
752	447090667903882000.000000			
753	471993618106128000.000000			
754	498283662634639000.000000			
755	526038062643389000.000000			
756	555338382732626000.000000			
757	586270730650833000.000000			
758	618926010348084000.000000			
759	653400189124473000.000000			
760	689794579658706000.000000			
761	728216137745696000.000000			
762	768777776618131000.000000			
763	811598698775761000.000000			
764	856804746297571000.000000			
765	904528770666346000.000000			
766	954911023192461000.000000			
767	100809956718428000.000000			
768	1064250713076450000.000000			
769	1123529477794800000.000000			
770	1186110069707970000.000000			
771	1252176400590710000.000000			
772	1321922626103610000.000000			
773	1395553716377580000.000000			
774	1473286058379810000.000000			
775	1555348091831570000.000000			
776	1641980980546590000.000000			
777	1733439321163030000.000000			
778	1829991891351820000.000000			
779	1931922439700110000.000000			
780	2039530519591410000.000000			
781	2153132369532650000.000000			
782	2273061842515620000.000000			
783	2399671387143740000.000000			
784	2533333083407640000.000000			
785	2674439736153450000.000000			
786	2823406029457200000.000000			
787	2980669745297960000.000000			
788	3146693050111060000.000000			
789	3321963853002250000.000000			
790	3506997239614470000.000000			
791	3702336985861000000.000000			
792	3908557155973460000.000000			
793	4126263789561180000.000000			
794	4356096682639740000.000000			
795	4598731267862770000.000000			
796	4854880599482730000.000000			
797	5125297448873920000.000000			
798	5410776516776190000.000000			
799	5712156768760630000.000000			
800	6030323900780590000.000000	5.18459E+18	6.26E+18	9.48672%

NiSource
TWO-STEP
Biased Result Revised

Current Dividend Yield	4.08%			Bold indicates bias	
Price/Next Dividend	24.10010218	0	-24.10010218		<u>IRR</u>
		1	1.000000		
Short Run Growth Revised	3.40%	2	1.034000		
		3	1.069156		
Long Run Growth Revised	6.30%	4	1.105507		
		5	1.143095	1.181959767	
Term Short Run	5	6	1.215110		
		7	1.291661		
	10.05%	8	1.373036		
		9	1.459537		
	24.10010288	10	1.551488	1.357270227	1.604239
		11	1.649232		
		12	1.753134		
<u>Years</u>		13	1.863581		
100	9.91819%	14	1.980987		
200	10.04639%	15	2.105789		
300	10.04995%	16	2.238453		
400	10.05006%	17	2.379476		
500	10.05006%	18	2.529383		
600	10.05006%	19	2.688734		
700	10.05006%	20	2.858124		
800	10.05006%	21	3.038186		
		22	3.229592		
		23	3.433056		
		24	3.649339		
		25	3.879247		
		26	4.123640		
		27	4.383429		
		28	4.659585		
		29	4.953139		
		30	5.265187		
		31	5.596893		
		32	5.949498		
		33	6.324316		
		34	6.722748		
		35	7.146281		
		36	7.596497		
		37	8.075076		
		38	8.583806		
		39	9.124586		
		40	9.699434		
		41	10.310499		
		42	10.960060		
		43	11.650544		
		44	12.384528		
		45	13.164754		
		46	13.994133		
		47	14.875763		
		48	15.812937		
		49	16.809152		
		50	17.868128		
		51	18.993820		
		52	20.190431		
		53	21.462428		
		54	22.814561		
		55	24.251878		
		56	25.779747		
		57	27.403871		
		58	29.130315		
		59	30.965524		
		60	32.916352		
		61	34.990083		
		62	37.194458		
		63	39.537709		
		64	42.028584		
		65	44.676385		
		66	47.490997		
		67	50.482930		
		68	53.663355		
		69	57.044146		
		70	60.637927		
		71	64.458117		
		72	68.518978		
		73	72.835674		
		74	77.424321		
		75	82.302054		
		76	87.487083		
		77	92.998769		

78	98.857692			
79	105.085726			
80	111.706127			
81	118.743613			
82	126.224461			
83	134.176602			
84	142.629727			
85	151.615400			
86	161.167171			
87	171.320702			
88	182.113907			
89	193.587083			
90	205.783069			
91	218.747402			
92	232.528488			
93	247.177783			
94	262.749984			
95	279.303233			
96	296.899336			
97	315.603994			
98	335.487046			
99	356.622730			
100	379.089962	331.6348251	391.979	9.91819%
101	402.972630			
102	428.359905			
103	455.346579			
104	484.033414			
105	514.527519			
106	546.942752			
107	581.400146			
108	618.028355			
109	656.964141			
110	698.352882			
111	742.349114			
112	789.117108			
113	838.831486			
114	891.677870			
115	947.853575			
116	1007.568351			
117	1071.045157			
118	1138.521002			
119	1210.247825			
120	1286.493438			
121	1367.542524			
122	1453.697703			
123	1545.280658			
124	1642.633340			
125	1746.119240			
126	1856.124753			
127	1973.060612			
128	2097.363430			
129	2229.497327			
130	2369.955658			
131	2519.262865			
132	2677.976425			
133	2846.688940			
134	3026.030343			
135	3216.670255			
136	3419.320481			
137	3634.737671			
138	3863.726144			
139	4107.140891			
140	4365.890768			
141	4640.941886			
142	4933.321225			
143	5244.120462			
144	5574.500051			
145	5925.693554			
146	6299.012248			
147	6695.850020			
148	7117.688571			
149	7566.102951			
150	8042.767437			
151	8549.461785			
152	9088.077878			
153	9660.626784			
154	10269.246272			
155	10916.208787			
156	11603.929940			
157	12334.977527			
158	13112.081111			
159	13938.142221			
160	14816.245181			
161	15749.668627			

162	16741.897750			
163	17796.637309			
164	18917.825459			
165	20109.648463			
166	21376.556316			
167	22723.279364			
168	24154.845964			
169	25676.601260			
170	27294.227139			
171	29013.763449			
172	30841.630546			
173	32784.653271			
174	34850.086427			
175	37045.641872			
176	39379.517310			
177	41860.426900			
178	44497.633795			
179	47300.984724			
180	50280.946762			
181	53448.646408			
182	56815.911131			
183	60395.313533			
184	64200.218285			
185	68244.832037			
186	72544.256455			
187	77114.544612			
188	81972.760923			
189	87137.044861			
190	92626.678687			
191	98462.159444			
192	104665.275489			
193	111259.187845			
194	118268.516679			
195	125719.433230			
196	133639.757524			
197	142059.062248			
198	151008.783169			
199	160522.336509			
200	170635.243709	149274.8289	176436.8	10.04639%
201	181385.264062			
202	192812.535698			
203	204959.725447			
204	217872.188151			
205	231598.136004			
206	246188.818572			
207	261698.714142			
208	278185.733133			
209	295711.434321			
210	314341.254683			
211	334144.753728			
212	355195.873213			
213	377573.213225			
214	401360.325659			
215	426646.026175			
216	453524.725824			
217	482096.783551			
218	512468.880915			
219	544754.420412			
220	579073.948898			
221	615555.607679			
222	654335.610963			
223	695558.754453			
224	739378.955984			
225	785959.830211			
226	835475.299514			
227	888110.243383			
228	944061.188717			
229	1003537.043606			
230	1066759.877353			
231	1133965.749626			
232	1205405.591853			
233	1281346.144139			
234	1362070.951220			
235	1447881.421147			
236	1539097.950679			
237	1636061.121572			
238	1739132.972231			
239	1848698.349482			
240	1965166.345499			
241	2088971.825265			
242	2220577.050257			
243	2360473.404423			
244	2509183.228902			
245	2667261.772323			

246	2835299.263979			
247	3013923.117610			
248	3203800.274019			
249	3405639.691283			
250	3620194.991833			
251	3848267.276319			
252	4090708.114727			
253	4348422.725955			
254	4622373.357690			
255	4913582.879224			
256	5223138.600615			
257	5552196.332454			
258	5901984.701399			
259	6273809.737587			
260	6669059.751055			
261	7089210.515371			
262	7535830.777840			
263	8010588.116844			
264	8515255.168205			
265	9051716.243802			
266	9621974.367161			
267	10228158.752292			
268	10872532.753687			
269	11557502.317169			
270	12285624.963151			
271	13059619.335829			
272	13882375.353986			
273	14756965.001288			
274	15686653.796369			
275	16674912.985540			
276	17725432.503629			
277	18842134.751358			
278	20029189.240693			
279	21291028.162857			
280	22632362.937117			
281	24058201.802155			
282	25573868.515691			
283	27185022.232179			
284	28897678.632807			
285	30718232.386674			
286	32653481.027034			
287	34710650.331737			
288	36897421.302637			
289	39221958.844703			
290	41692942.251919			
291	44319597.613790			
292	47111732.263459			
293	50079771.396056			
294	53234796.994008			
295	56588589.204631			
296	60153670.324522			
297	63943351.554967			
298	67971782.702930			
299	72254005.013215			
300	76806007.329047	67191298.54	79417412	10.04995%
301	81644785.790777			
302	86788407.295596			
303	92256076.955219			
304	98068209.803397			
305	104246507.021011			
306	110814036.963335			
307	117795321.292025			
308	125216426.533423			
309	133105061.405028			
310	141490680.273545			
311	150404593.130778			
312	159880082.498017			
313	169952527.695393			
314	180659536.940202			
315	192041087.767435			
316	204139676.296783			
317	217000475.903481			
318	230671505.885400			
319	245203810.756180			
320	260651650.833820			
321	277072704.836350			
322	294528285.241040			
323	313083567.211226			
324	332807831.945533			
325	353774725.358102			
326	376062533.055662			
327	399754472.638169			
328	424939004.414373			
329	451710161.692479			

330	480167901.879105			
331	510418479.697488			
332	542574843.918430			
333	576757059.085291			
334	613092753.807665			
335	651717597.297547			
336	692775805.927293			
337	736420681.700712			
338	782815184.647857			
339	832132541.280672			
340	884556891.381354			
341	940283975.538380			
342	999521865.997297			
343	1062491743.555130			
344	1129428723.399100			
345	1200582732.973240			
346	1276219445.150560			
347	1356621270.195040			
348	1442088410.217330			
349	1532939980.061020			
350	1629515198.804870			
351	1732174656.329570			
352	1841301659.678340			
353	1957303664.238070			
354	2080613795.085070			
355	2211692464.175430			
356	2351029089.418480			
357	2499143922.051850			
358	2656589989.141110			
359	2823955158.457000			
360	3001864333.439790			
361	3190981786.446500			
362	3392013638.992630			
363	3605710498.249160			
364	3832870259.638860			
365	4074341085.996110			
366	4331024574.413860			
367	4603879122.601940			
368	4893923507.325860			
369	5202240688.287390			
370	5529981851.649490			
371	5878370708.303410			
372	6248708062.926520			
373	6642376670.890890			
374	7060846401.157020			
375	7505679724.429910			
376	7978537547.069000			
377	8481185412.534340			
378	9015500093.524010			
379	9583476599.416020			
380	10187235625.179200			
381	10829031469.565500			
382	11511260452.148100			
383	12236469860.633500			
384	13007367461.853400			
385	13826831611.950100			
386	14697922003.503000			
387	15623891089.723700			
388	16608196228.376300			
389	17654512590.764000			
390	18766746883.982100			
391	19949051937.673000			
392	21205842209.746400			
393	22541810268.960400			
394	23961944315.904900			
395	25471546807.806900			
396	27076254256.698800			
397	28782058274.870800			
398	30595327946.187600			
399	32522833606.797500			
400	34571772124.025700	30244017919	3.57E+10	10.05006%
401	36749793767.839300			
402	39065030775.213200			
403	41526127714.051600			
404	44142273760.036800			
405	46923237006.919200			
406	49879400938.355100			
407	53021803197.471400			
408	56362176798.912100			
409	59912993937.243600			
410	63687512555.289900			
411	67699825846.273200			
412	71964914874.588400			
413	76498704511.687500			

414	81318122895.923800
415	86441164638.367000
416	91886958010.584100
417	97675836365.250900
418	103829414056.262000
419	110370667141.806000
420	117324019171.740000
421	124715432379.560000
422	132572504619.472000
423	140924572410.499000
424	149802820472.360000
425	159240398162.119000
426	169272543246.332000
427	179936713470.851000
428	191272726419.515000
429	203322908183.944000
430	216132251399.532000
431	229748583237.703000
432	244222743981.678000
433	259608776852.524000
434	275964129794.233000
435	293349869971.270000
436	311830911779.460000
437	331476259221.566000
438	352359263552.524000
439	374557897156.333000
440	398155044677.182000
441	423238812491.845000
442	449902857678.831000
443	478246737712.597000
444	508376282188.491000
445	540403987966.366000
446	574449439208.247000
447	610639753878.366000
448	649110058372.703000
449	690003992050.183000
450	733474243549.345000
451	779683120892.954000
452	828803157509.210000
453	881017756432.290000
454	936521875087.524000
455	995522753218.038000
456	1058240686670.770000
457	1124909849931.030000
458	1195779170476.690000
459	1271113258216.720000
460	1351193393484.370000
461	1436318577273.890000
462	1526806647642.140000
463	1622995466443.600000
464	1725244180829.540000
465	1833934564221.810000
466	1949472441767.780000
467	2072289205599.150000
468	2202843425551.900000
469	2341622561361.660000
470	2489144782727.450000
471	2645960904039.280000
472	2812656440993.750000
473	2989853796776.360000
474	3178214585973.270000
475	3378442104889.580000
476	3591283957497.630000
477	3817534846819.980000
478	4058039542169.640000
479	4313696033326.320000
480	4585458883425.880000
481	4874342793081.710000
482	5181426389045.860000
483	5507856251555.750000
484	5854851195403.760000
485	6223706820714.200000
486	6615800350419.190000
487	7032595772495.600000
488	7475649306162.820000
489	7946615212451.080000
490	8447251970835.500000
491	8979428844998.130000
492	9545132862233.020000
493	10146476232553.700000
494	10785704235204.600000
495	11465203602022.500000
496	12187511428949.900000
497	12955324648973.700000

498	13771510101859.100000			
499	14639115238276.200000			
500	15561379498287.600000	1.36134E+13	1.61E+13	10.05006%
501	16541746406679.700000			
502	17583876430300.500000			
503	18691660645409.500000			
504	19869235266070.200000			
505	21120997087832.700000			
506	22451619904366.100000			
507	23866071958341.200000			
508	25369634491716.700000			
509	26967921464694.800000			
510	28666900516970.600000			
511	30472915249539.800000			
512	32392708910260.800000			
513	34433449571607.200000			
514	36602756894618.500000			
515	38908730578979.400000			
516	41359980605455.100000			
517	43965659383598.800000			
518	46735495924765.500000			
519	49679832168025.700000			
520	52809661594611.400000			
521	56136670275071.900000			
522	59673280502401.400000			
523	63432697174052.700000			
524	67428957096018.000000			
525	71676981393067.100000			
526	76192631220830.300000			
527	80992766987742.600000			
528	86095311307970.400000			
529	91519315920372.500000			
530	97285032823356.000000			
531	103413989891227.000000			
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541	190507439305175.000000			
542	202509407981401.000000			
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545	243245602480658.000000			
546	258570075436940.000000			
547	274859990189467.000000			
548	292176169571403.000000			
549	310583268254402.000000			
550	330150014154429.000000			
551	350949465046158.000000			
552	373059281344066.000000			
553	396562016068742.000000			
554	421545423081073.000000			
555	448102784735180.000000			
556	476333260173497.000000			
557	506342255564427.000000			
558	538241817664986.000000			
559	572151052177880.000000			
560	608196568465086.000000			
561	646512952278387.000000			
562	687243268271925.000000			
563	730539594173056.000000			
564	776563588605959.000000			
565	825487094688134.000000			
566	877492781653486.000000			
567	932774826897656.000000			
568	991539640992208.000000			
569	1054006638374720.000000			
570	1120409056592320.000000			
571	1190994827157640.000000			
572	1266027501268570.000000			
573	1345787233848490.000000			
574	1430571829580950.000000			
575	1520697854844550.000000			
576	1616501819699750.000000			
577	1718341434340840.000000			
578	1826596944704310.000000			
579	1941672552220680.000000			
580	2063997923010580.000000			
581	2194029792160250.000000			

582	2332253669066350.000000			
583	2479185650217530.000000			
584	2635374346181230.000000			
585	2801402929990650.000000			
586	2977891314580060.000000			
587	3165498467398600.000000			
588	3364924870844710.000000			
589	3576915137707930.000000			
590	3802260791383530.000000			
591	4041803221240690.000000			
592	4296436824178850.000000			
593	4567112344102120.000000			
594	4854840421780550.000000			
595	5160695368352730.000000			
596	5485819176558950.000000			
597	5831425784682170.000000			
598	6198805609117140.000000			
599	6589330362491520.000000			
600	7004458175328490.000000	6.12763E+15	7.24E+15	10.05006%
601	7445739040374180.000000			
602	7914820599917750.000000			
603	8413454297712570.000000			
604	8943501918468460.000000			
605	9506942539331980.000000			
606	10105879919309900.000000			
607	10742550354226400.000000			
608	11419331026542700.000000			
609	12138748881214900.000000			
610	12903490060731400.000000			
611	13716409934557500.000000			
612	14580543760434600.000000			
613	15499118017342000.000000			
614	16475562452434500.000000			
615	17513522886937900.000000			
616	18616874828815000.000000			
617	19789737943030300.000000			
618	21036491433441200.000000			
619	22361790393748000.000000			
620	23770583188554200.000000			
621	25268129929433100.000000			
622	26860022114987300.000000			
623	28552203508231500.000000			
624	30350992329250100.000000			
625	32263104845992900.000000			
626	34295680451290400.000000			
627	36456308319721700.000000			
628	38753055743864200.000000			
629	41194498255727600.000000			
630	43789751645838500.000000			
631	46548505999526300.000000			
632	49481061877496500.000000			
633	52598368775778700.000000			
634	55912066008652800.000000			
635	59434526167197900.000000			
636	63178901315731400.000000			
637	67159172098622400.000000			
638	71390199940835600.000000			
639	75887782537108300.000000			
640	80668712836946100.000000			
641	85750841745673700.000000			
642	91153144775651200.000000			
643	96895792896517200.000000			
644	103000227848998000.000000			
645	109489242203485000.000000			
646	116387064462304000.000000			
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648	131513774843405000.000000			
649	139799142658540000.000000			
650	148606488646028000.000000			
651	157968697430728000.000000			
652	167920725368863000.000000			
653	178499731067102000.000000			
654	189745214124329000.000000			
655	201699162614162000.000000			
656	214406209858854000.000000			
657	227913801079962000.000000			
658	242272370548000000.000000			
659	257535529892524000.000000			
660	273760268275752000.000000			
661	291007165177125000.000000			
662	309340616583284000.000000			
663	328829075428031000.000000			
664	349545307179996000.000000			
665	371566661532336000.000000			

666	394975361208873000.000000			
667	419858808965032000.000000			
668	446309913929829000.000000			
669	474427438507409000.000000			
670	504316367133375000.000000			
671	536088298262778000.000000			
672	569861861053333000.000000			
673	605763158299693000.000000			
674	643926237272574000.000000			
675	684493590220746000.000000			
676	727616686404653000.000000			
677	773456537648146000.000000			
678	822184299519979000.000000			
679	873981910389737000.000000			
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681	987572465301181000.000000			
682	1049789530615160000.000000			
683	1115926271043910000.000000			
684	1186229626119680000.000000			
685	1260962092565220000.000000			
686	1340402704396820000.000000			
687	1424848074773820000.000000			
688	1514613503484580000.000000			
689	1610034154204100000.000000			
690	1711466305918960000.000000			
691	1819288683191860000.000000			
692	1933903870232940000.000000			
693	2055739814057620000.000000			
694	2185251422343250000.000000			
695	2322922261950870000.000000			
696	2469266364453780000.000000			
697	2624830145414370000.000000			
698	2790194444575470000.000000			
699	2965976694583730000.000000			
700	3152833226342500000.000000	2.75816E+18	3.26E+18	10.05006%
701	3351461719602080000.000000			
702	3562603807937010000.000000			
703	3787047847837040000.000000			
704	4025631862250770000.000000			
705	4279246669572570000.000000			
706	4548839209755640000.000000			
707	4835416079970250000.000000			
708	5140047293008370000.000000			
709	5463870272467900000.000000			
710	5808094099633380000.000000			
711	6174004027910280000.000000			
712	6562966281668630000.000000			
713	6976433157413750000.000000			
714	7415948446330820000.000000			
715	7883153198449660000.000000			
716	8379791849951990000.000000			
717	8907718736498960000.000000			
718	9468905016898400000.000000			
719	10065446032963000000.000000			
720	10699569133039700000.000000			
721	11373641988421200000.000000			
722	12090181433691700000.000000			
723	12851862864014300000.000000			
724	13661530224447200000.000000			
725	14522206628587300000.000000			
726	15437105646188300000.000000			
727	16409643301898200000.000000			
728	17443450829917800000.000000			
729	18542388232202600000.000000			
730	19710558690831400000.000000			
731	20952323888353700000.000000			
732	22272320293320000000.000000			
733	23675476471799200000.000000			
734	25167031489522500000.000000			
735	26752554473362500000.000000			
736	28437965405184300000.000000			
737	30229557225710900000.000000			
738	32134019330930700000.000000			
739	34158462548779300000.000000			
740	36310445689352400000.000000			
741	38598003767781600000.000000			
742	41029678005151900000.000000			
743	43614547719476400000.000000			
744	46362264225803400000.000000			
745	49283086872029000000.000000			
746	52387921344966900000.000000			
747	55688360389699800000.000000			
748	59196727094250900000.000000			
749	62926120901188700000.000000			

750	66890466517963500000.000000			
751	71104565908595200000.000000			
752	75584153560836700000.000000			
753	80345955235169500000.000000			
754	85407750414985100000.000000			
755	90788438691129200000.000000			
756	96508110328670300000.000000			
757	10258812127937700000.000000			
758	10905117291997700000.000000			
759	11592139681393600000.000000			
760	12322444481321400000.000000			
761	13098758483644600000.000000			
762	13923980268114200000.000000			
763	14801191025005400000.000000			
764	15733666059580800000.000000			
765	16724887021334400000.000000			
766	17778554903678400000.000000			
767	18898603862610200000.000000			
768	20089215905954600000.000000			
769	21354836508029700000.000000			
770	22700191208035600000.000000			
771	24130303254141900000.000000			
772	25650512359152800000.000000			
773	27266494637779400000.000000			
774	28984283799959500000.000000			
775	30810293679357000000.000000			
776	32751342181156500000.000000			
777	34814676738569300000.000000			
778	37008001373099200000.000000			
779	39339505459604400000.000000			
780	41817894303559500000.000000			
781	44452421644683800000.000000			
782	47252924208298800000.000000			
783	50229858433421700000.000000			
784	53394339514727200000.000000			
785	56758182904155000000.000000			
786	60333948427116800000.000000			
787	64134987178025100000.000000			
788	68175491370240700000.000000			
789	72470547326565900000.000000			
790	77036191808139500000.000000			
791	81889471892052300000.000000			
792	87048508621251600000.000000			
793	92532564664390400000.000000			
794	98362116238247000000.000000			
795	104558929561257000000.000000			
796	111146142123616000000.000000			
797	118148349077404000000.000000			
798	125591695069280000000.000000			
799	133503971858645000000.000000			
800	1419147220857390000000.000000	1.2415E+21	1.47E+21	10.05006%

NiSource
TWO-STEP
Unbiased Result

Current Dividend Yield	4.08%				
Price/Next Dividend	24.046901	0	-24.04690108		IRR
		1	1.038500		
Short Run Growth proposed by Tim	3.85%	2	1.078482		
		3	1.120004		
Long Run Growth proposed by Tim	5.57%	4	1.163124		
		5	1.207904	1.207904236	
Term Short Run	5	6	1.275185		
		7	1.346212		
	9.64%	8	1.421196		
		9	1.500357		
		10	1.583927	1.31130165	1.583927
		11	1.672152		
		12	1.765290		
<u>Years</u>		13	1.863617		
100	9.53665%	14	1.967421		
200	9.63624%	15	2.077006		
300	9.63831%	16	2.192695		
400	9.63836%	17	2.314828		
500	9.63836%	18	2.443764		
600	9.63836%	19	2.579882		
700	9.63836%	20	2.723581		
800	9.63836%	21	2.875285		
		22	3.035438		
		23	3.204512		
		24	3.383003		
		25	3.571437		
		26	3.770366		
		27	3.980375		
		28	4.202082		
		29	4.436138		
		30	4.683231		
		31	4.944087		
		32	5.219472		
		33	5.510197		
		34	5.817115		
		35	6.141128		
		36	6.483189		
		37	6.844302		
		38	7.225530		
		39	7.627992		
		40	8.052871		
		41	8.501416		
		42	8.974945		
		43	9.474850		
		44	10.002599		
		45	10.559743		
		46	11.147921		
		47	11.768860		
		48	12.424386		
		49	13.116424		
		50	13.847009		8.69060%
		51	14.618287		
		52	15.432526		
		53	16.292118		
		54	17.199589		
		55	18.157606		8.90219%
		56	19.168984		
		57	20.236697		
		58	21.363881		
		59	22.553849		
		60	23.810098		
		61	25.136321		
		62	26.536414		
		63	28.014492		
		64	29.574899		
		65	31.222221		
		66	32.961299		
		67	34.797243		
		68	36.735450		
		69	38.781614		
		70	40.941750		
		71	43.222206		
		72	45.629683		
		73	48.171256		
		74	50.854395		
		75	53.686985		
		76	56.677350		
		77	59.834278		

78	63.167047			
79	66.685452			
80	70.399832			
81	74.321102			
82	78.460788			
83	82.831054			
84	87.444743			
85	92.315416			
86	97.457384			
87	102.885760			
88	108.616497			
89	114.666436			
90	121.053357			
91	127.796029			
92	134.914267			
93	142.428992			
94	150.362287			
95	158.737466			
96	167.579143			
97	176.913302			
98	186.767372			
99	197.170315			
100	208.152702	172.3255002	208.1527	9.53665%
101	219.746807			
102	231.986704			
103	244.908364			
104	258.549760			
105	272.950981			
106	288.154351			
107	304.204548			
108	321.148742			
109	339.036726			
110	357.921072			
111	377.857276			
112	398.903926			
113	421.122875			
114	444.579419			
115	469.342493			
116	495.484869			
117	523.083377			
118	552.219121			
119	582.977726			
120	615.449585			
121	649.730127			
122	685.920095			
123	724.125844			
124	764.459654			
125	807.040056			
126	851.992188			
127	899.448152			
128	949.547415			
129	1002.437206			
130	1058.272958			
131	1117.218762			
132	1179.447847			
133	1245.143092			
134	1314.497562			
135	1387.715076			
136	1465.010806			
137	1546.611908			
138	1632.758191			
139	1723.702822			
140	1819.713069			
141	1921.071087			
142	2028.074747			
143	2141.038510			
144	2260.294355			
145	2386.192751			
146	2519.103687			
147	2659.417763			
148	2807.547332			
149	2963.927718			
150	3129.018492			
151	3303.304822			
152	3487.298901			
153	3681.541450			
154	3886.603308			
155	4103.087113			
156	4331.629065			
157	4572.900804			
158	4827.611379			
159	5096.509332			
160	5380.384902			
161	5680.072341			

162	5996.452371			
163	6330.454768			
164	6683.061098			
165	7055.307601			
166	7448.288235			
167	7863.157890			
168	8301.135784			
169	8763.509047			
170	9251.636501			
171	9766.952654			
172	10310.971917			
173	10885.293053			
174	11491.603876			
175	12131.686212			
176	12807.421134			
177	13520.794491			
178	14273.902744			
179	15068.959127			
180	15908.300150			
181	16794.392469			
182	17729.840129			
183	18717.392224			
184	19759.950971			
185	20860.580240			
186	22022.514560			
187	23249.168621			
188	24544.147313			
189	25911.256318			
190	27354.513295			
191	28878.159686			
192	30486.673180			
193	32184.780876			
194	33977.473171			
195	35870.018427			
196	37867.978453			
197	39977.224853			
198	42203.956277			
199	44554.716642			
200	47036.414359	38940.5161	47036.41	9.63624%
201	49656.342639			
202	52422.200924			
203	55342.117515			
204	58424.673461			
205	61678.927773			
206	65114.444049			
207	68741.318583			
208	72570.210028			
209	76612.370727			
210	80879.679776			
211	85384.677940			
212	90140.604501			
213	95161.436172			
214	100461.928166			
215	106057.657565			
216	111965.069092			
217	118201.523440			
218	124785.348296			
219	131735.892196			
220	139073.581391			
221	146819.979875			
222	154997.852754			
223	163631.233152			
224	172745.492838			
225	182367.416790			
226	192525.281905			
227	203248.940107			
228	214569.906071			
229	226521.449839			
230	239138.694595			
231	252458.719884			
232	266520.670581			
233	281365.871933			
234	297037.950999			
235	313582.964870			
236	331049.536013			
237	349488.995169			
238	368955.532200			
239	389506.355344			
240	411201.859336			
241	434105.802902			
242	458285.496123			
243	483811.998257			
244	510760.326560			
245	539209.676749			

246	569243.655744			
247	600950.527369			
248	634423.471744			
249	669760.859120			
250	707066.538973			
251	746450.145194			
252	788027.418281			
253	831920.545479			
254	878258.519863			
255	927177.519419			
256	978821.307251			
257	1033341.654064			
258	1090898.784196			
259	1151661.846475			
260	1215809.411324			
261	1283529.995535			
262	1355022.616286			
263	1430497.376013			
264	1510176.079857			
265	1594292.887505			
266	1683095.001339			
267	1776843.392914			
268	1875813.569899			
269	1980296.385743			
270	2090598.894429			
271	2207045.252848			
272	2329977.673432			
273	2459757.429842			
274	2596765.918684			
275	2741405.780355			
276	2894102.082321			
277	3055303.568306			
278	3225483.977061			
279	3405143.434583			
280	3594809.923889			
281	3795040.836650			
282	4006424.611251			
283	4229582.462098			
284	4465170.205237			
285	4713880.185668			
286	4976443.312010			
287	5253631.204489			
288	5546258.462579			
289	5855185.058945			
290	6181318.866728			
291	6525618.327605			
292	6889095.268452			
293	7272817.874905			
294	7677913.830537			
295	8105573.630898			
296	8557054.082139			
297	9033681.994515			
298	9536858.081609			
299	10068061.076755			
300	10628852.078730	8799416.179	10628852	9.63831%
301	11220879.139515			
302	11845882.107586			
303	12505697.740979			
304	13202265.105151			
305	13937631.271508			
306	14713957.333331			
307	15533524.756798			
308	16398742.085751			
309	17312152.019928			
310	18276438.887438			
311	19294436.533468			
312	20369136.648382			
313	21503697.559697			
314	22701453.513772			
315	23965924.474489			
316	25300826.467718			
317	26710082.501970			
318	28197834.097330			
319	29768453.456551			
320	31426556.314081			
321	33177015.500776			
322	35024975.264169			
323	36975866.386383			
324	39035422.144105			
325	41209695.157531			
326	43505075.177806			
327	45928307.865209			
328	48486514.613302			
329	51187213.477263			

330	54038341.267946			
331	57048276.876571			
332	60225865.898596			
333	63580446.629147			
334	67121877.506391			
335	70860566.083497			
336	74807499.614348			
337	78974277.342867			
338	83373144.590865			
339	88017028.744576			
340	92919577.245649			
341	98095197.698231			
342	103559100.210023			
343	109327342.091721			
344	115416875.046230			
345	121845594.986305			
346	128632394.627042			
347	135797219.007768			
348	143361124.106501			
349	151346338.719233			
350	159776329.785894			
351	168675871.354969			
352	178071117.389440			
353	187989678.628032			
354	198460703.727614			
355	209514964.925242			
356	221184948.471578			
357	233504950.101445			
358	246511175.822095			
359	260241848.315386			
360	274737319.266553			
361	290040187.949700			
362	306195426.418498			
363	323250511.670009			
364	341255565.170028			
365	360263500.149999			
366	380330177.108354			
367	401514567.973289			
368	423878929.409401			
369	447488985.777505			
370	472414122.285312			
371	498727588.896604			
372	526506715.598145			
373	555833139.656962			
374	586793045.535854			
375	619477418.172202			
376	653982310.364393			
377	690409125.051690			
378	728864913.317069			
379	769462688.988830			
380	812321760.765508			
381	857568082.840147			
382	905334625.054343			
383	955761763.669870			
384	1008997693.906280			
385	1065198865.456860			
386	1124530442.262810			
387	1187166787.896850			
388	1253291977.982700			
389	1323100341.156340			
390	1396797030.158750			
391	1474598624.738590			
392	1556733768.136530			
393	1643443839.021730			
394	1734983660.855240			
395	1831622250.764880			
396	1933643610.132490			
397	2041347559.216860			
398	2155050618.265240			
399	2275086937.702620			
400	2401809280.132650	1988410346	2.4E+09	9.63836%
401	2535590057.036040			
402	2676822423.212950			
403	2825921432.185910			
404	2983325255.958670			
405	3149496472.715570			
406	3324923426.245820			
407	3510121661.087720			
408	3705635437.610300			
409	3912039331.485200			
410	4129939922.248920			
411	4359977575.918190			
412	4602828326.896830			
413	4859205864.704990			

414	5129863631.369050
415	5415597035.636310
416	5717245790.521250
417	6035696381.053290
418	6371884669.477960
419	6726798645.567880
420	7101481330.126010
421	7497033840.214030
422	7914618625.113950
423	8355462882.532800
424	8820862165.089880
425	9312184187.685380
426	9830872846.939460
427	10378452464.514000
428	10956532266.787400
429	11566811114.047500
430	12211082493.099900
431	12891239787.965600
432	13609281844.155300
433	14367318842.874700
434	15167578502.422900
435	16012412625.007800
436	16904304008.220700
437	17845873741.478600
438	18839888908.879000
439	19889270721.103600
440	20997103100.269000
441	22166641742.954000
442	23401323688.036600
443	24704777417.460200
444	26080833519.612700
445	27533535946.655200
446	29067153898.883900
447	30686194371.051700
448	32395415397.519300
449	34199840035.161100
450	36104771125.119600
451	38115806876.788700
452	40238857319.825900
453	42480161672.540200
454	44846306677.700700
455	47344245959.648600
456	49981320459.601000
457	52765280009.200800
458	55704306105.713300
459	58807035955.801500
460	62082587858.539700
461	65540588002.260400
462	69191198753.986300
463	73045148524.583300
464	77113763297.402600
465	81408999913.067900
466	85943481208.225800
467	90730533111.524000
468	95784223805.835900
469	101119405071.821000
470	106751755934.321000
471	112697828739.863000
472	118975097800.674000
473	125602010748.171000
474	132598042746.844000
475	139983753727.843000
476	147780848810.484000
477	156012242089.228000
478	164702123973.598000
479	173876032278.928000
480	183560927276.864000
481	193785270926.185000
482	204579110516.774000
483	215974166972.558000
484	228003928072.930000
485	240703746866.592000
486	254110945567.061000
487	268264925235.147000
488	283207281570.744000
489	298981927154.235000
490	315635220496.726000
491	333216102278.393000
492	351776239175.300000
493	371370175697.364000
494	392055494483.707000
495	413892985526.450000
496	436946824820.273000
497	461284762962.762000

498	486978324259.788000			
499	514103016921.058000			
500	542738554963.561000	4.49323E+11	5.43E+11	9.63836%
501	572969092475.032000			
502	604883470925.891000			
503	638575480256.463000			
504	674144134506.748000			
505	711693962798.774000			
506	751335316526.666000			
507	793184693657.202000			
508	837365081093.908000			
509	884006316110.839000			
510	933245467918.212000			
511	985227240481.257000			
512	1040104397776.060000			
513	1098038212732.190000			
514	1159198941181.370000			
515	1223766322205.180000			
516	1291930106352.000000			
517	1363890613275.810000			
518	1439859320435.270000			
519	1520059484583.520000			
520	1604726797874.820000			
521	1694110080516.450000			
522	1788472012001.210000			
523	1888089903069.680000			
524	1993256510670.660000			
525	2104280898315.020000			
526	2221489344351.170000			
527	2345226300831.530000			
528	2475855405787.840000			
529	2613760551890.230000			
530	2759347014630.510000			
531	2913042643345.430000			
532	3075299118579.770000			
533	3246593279484.670000			
534	3427428525151.960000			
535	3618336294002.930000			
536	3819877625578.890000			
537	4032644809323.640000			
538	4257263125202.960000			
539	4494392681276.770000			
540	4744730353623.880000			
541	5009011834320.730000			
542	5288013793492.400000			
543	5582556161789.930000			
544	5893504540001.630000			
545	6221772742879.720000			
546	6568325484658.120000			
547	6934181214153.580000			
548	7320415107781.930000			
549	7728162229285.380000			
550	8158620865456.580000			
551	8613056047662.510000			
552	9092803269517.310000			
553	9599272411629.430000			
554	10133951884957.200000			
555	10698413004949.300000			
556	11294314609325.000000			
557	11923407933064.400000			
558	12587541754936.100000			
559	13288667830686.000000			
560	14028846628855.200000			
561	14810253386082.500000			
562	15635184499687.300000			
563	16506064276319.800000			
564	17425452056510.900000			
565	18396049736058.500000			
566	19420709706357.000000			
567	20502443237001.100000			
568	21644429325302.000000			
569	22850024038721.300000			
570	24122770377678.100000			
571	25466408687714.800000			
572	26884887651620.500000			
573	28382375893815.800000			
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575	31632228605773.700000			
576	33394143739115.300000			
577	35254197545384.000000			
578	37217856348661.900000			
579	39290890947282.400000			
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581	43789795795064.600000			

582	46228887420849.700000			
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587	60620016365949.700000			
588	63996551277533.100000			
589	67561159183691.700000			
590	71324315750223.300000			
591	75297080137510.700000			
592	79491127501170.100000			
593	83918783302985.300000			
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595	93527692948947.500000			
596	98737185446203.900000			
597	104236846675557.000000			
598	110042839035386.000000			
599	116172225169657.000000			
600	122643018111607.000000	1.01534E+14	1.23E+14	9.63836%
601	129474234220423.000000			
602	136685949066501.000000			
603	144299356429505.000000			
604	152336830582629.000000			
605	160821992046081.000000			
606	169779777003048.000000			
607	179236510582118.000000			
608	189219984221542.000000			
609	199759537342681.000000			
610	210886143572669.000000			
611	222632501769666.000000			
612	235033132118237.000000			
613	24812447757223.000000			
614	261945010978274.000000			
615	276535348089764.000000			
616	291938366978364.000000			
617	308199334019059.000000			
618	325366036923920.000000			
619	343488925180583.000000			
620	362621258313141.000000			
621	382819262401183.000000			
622	404142295316929.000000			
623	426653021166082.000000			
624	450417594445033.000000			
625	475505854455621.000000			
626	501991530548799.000000			
627	529952458800367.000000			
628	559470810755548.000000			
629	590633334914632.000000			
630	623531611669377.000000			
631	658262322439361.000000			
632	694927533799234.000000			
633	733634997431851.000000			
634	774498466788805.000000			
635	817638031388942.000000			
636	863180469737306.000000			
637	911259621901674.000000			
638	962016782841597.000000			
639	1015601117645870.000000			
640	1072170099898750.000000			
641	1131889974463110.000000			
642	1194936246040710.000000			
643	1261494194945170.000000			
644	1331759421603620.000000			
645	1405938421386940.000000			
646	1484249191458190.000000			
647	1566921871422420.000000			
648	1654199419660640.000000			
649	1746338327335740.000000			
650	1843609372168340.000000			
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652	2054707235868960.000000			
653	2169154428906860.000000			
654	2289976330596970.000000			
655	2417528012211220.000000			
656	2552184322491380.000000			
657	2694340989254160.000000			
658	2844415782355610.000000			
659	3002849741432820.000000			
660	3170108472030630.000000			
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662	3533093785648230.000000			
663	3729887109508840.000000			
664	3937641821508480.000000			
665	4156968470966500.000000			

666	4388511614799340.000000			
667	4632951711743660.000000			
668	4891007122087780.000000			
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670	5451039616174570.000000			
671	5754662522795490.000000			
672	6075197225315200.000000			
673	6413585710765260.000000			
674	6770822434854880.000000			
675	7147957244476300.000000			
676	7546098462993630.000000			
677	7966416147382380.000000			
678	8410145526791580.000000			
679	8878590632633870.000000			
680	9373128130871580.000000			
681	9895211367761130.000000			
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683	11028237708446100.000000			
684	11642510548806500.000000			
685	12290998386375100.000000			
686	12975606996496100.000000			
687	13698348306201000.000000			
688	14461346306856400.000000			
689	15266843296148300.000000			
690	16117206467743700.000000			
691	17014934867997100.000000			
692	17962666740144500.000000			
693	18963187277570600.000000			
694	20019436808931200.000000			
695	21134519439188700.000000			
696	22311712171951500.000000			
697	23554474539929200.000000			
698	24866458771803300.000000			
699	26251520525392700.000000			
700	27713730218657100.000000	2.29436E+16	2.77E+16	9.63836%
701	29257384991836300.000000			
702	30887021335881600.000000			
703	32607428424290200.000000			
704	34423662187523200.000000			
705	36341060171368200.000000			
706	38365257222913400.000000			
707	40502202050229700.000000			
708	42758174704427500.000000			
709	45139805035464100.000000			
710	47654092175939500.000000			
711	50308425110139300.000000			
712	53110604388774100.000000			
713	56068865053228800.000000			
714	59191900836693600.000000			
715	62488889713297500.000000			
716	65969520870328100.000000			
717	69644023182805400.000000			
718	73523195274087700.000000			
719	77618437250854400.000000			
720	81941784205727000.000000			
721	86505941585986000.000000			
722	91324322532325400.000000			
723	96411087297375900.000000			
724	101781184859840000.000000			
725	107450396856533000.000000			
726	113435383961442000.000000			
727	119753734848094000.000000			
728	126424017879133000.000000			
729	133465835675001000.000000			
730	140899882722098000.000000			
731	148748006189719000.000000			
732	157033270134486000.000000			
733	165780023280977000.000000			
734	175013970577728000.000000			
735	184762248738907000.000000			
736	195053505993664000.000000			
737	205917986277512000.000000			
738	217387618113169000.000000			
739	229496108442072000.000000			
740	242279041682296000.000000			
741	255773984304000000.000000			
742	270020595229733000.000000			
743	285060742384029000.000000			
744	300938625734819000.000000			
745	317700907188249000.000000			
746	335396847718634000.000000			
747	354078452136562000.000000			
748	373800621920569000.000000			
749	394621316561544000.000000			

750	416601723894022000.000000			
751	439806439914919000.000000			
752	464303658618180000.000000			
753	490165372403213000.000000			
754	517467583646072000.000000			
755	546290528055158000.000000			
756	576718910467831000.000000			
757	608842153780889000.000000			
758	642754661746484000.000000			
759	678556096405764000.000000			
760	716351670975565000.000000			
761	756252459048904000.000000			
762	798375721017928000.000000			
763	842845248678626000.000000			
764	889791729030026000.000000			
765	939353128336999000.000000			
766	991675097585369000.000000			
767	1046911400520870000.000000			
768	1105224365529890000.000000			
769	1166785362689900000.000000			
770	1231775307391730000.000000			
771	1300385192013450000.000000			
772	1372816647208600000.000000			
773	1449282534458120000.000000			
774	1530007571627440000.000000			
775	1615228993367080000.000000			
776	1705197248297630000.000000			
777	1800176735027810000.000000			
778	1900446579168860000.000000			
779	2006301453628560000.000000			
780	2118052444595670000.000000			
781	2236027965759650000.000000			
782	2360574723452470000.000000			
783	2492058735548770000.000000			
784	2630866407118840000.000000			
785	2777405665995350000.000000			
786	2932107161591300000.000000			
787	3095425530491930000.000000			
788	3267840732540330000.000000			
789	3449859461342830000.000000			
790	364201663339630000.000000			
791	3844876959816640000.000000			
792	4059036606478430000.000000			
793	4285124945459280000.000000			
794	4523806404921360000.000000			
795	4775782421675480000.000000			
796	5041793502562810000.000000			
797	5322621400655560000.000000			
798	5619091412672070000.000000			
799	5932074804357910000.000000			
800	6262491370960640000.000000	5.18459E+18	6.26E+18	9.63836%

NiSource
TWO-STEP
Unbiased Result Revised

Current Dividend Yield	4.08%				
Price/Next Dividend	24.10010218	0	-24.10010218		IRR
		1	1.034000		
Short Run Growth Revised	3.40%	2	1.069156		
		3	1.105507		
Long Run Growth Revised	6.30%	4	1.143095		
		5	1.181960	1.181959767	
Term Short Run	5	6	1.256423		
		7	1.335578		
	10.18%	8	1.419719		
		9	1.509162		
		10	1.604239	1.357270227	1.604239
		11	1.705306		
		12	1.812740		
<u>Years</u>		13	1.926943		
100	10.05870%	14	2.048340		
200	10.17572%	15	2.177386		
300	10.17865%	16	2.314561		
400	10.17873%	17	2.460378		
500	10.17873%	18	2.615382		
600	10.17873%	19	2.780151		
700	10.17873%	20	2.955301		
800	10.17873%	21	3.141485		
		22	3.339398		
		23	3.549780		
		24	3.773416		
		25	4.011142		
		26	4.263843		
		27	4.532466		
		28	4.818011		
		29	5.121546		
		30	5.444203		
		31	5.787188		
		32	6.151781		
		33	6.539343		
		34	6.951321		
		35	7.389255		
		36	7.854778		
		37	8.349629		
		38	8.875655		
		39	9.434821		
		40	10.029215		
		41	10.661056		
		42	11.332702		
		43	12.046663		
		44	12.805602		
		45	13.612355		
		46	14.469934		
		47	15.381539		
		48	16.350576		
		49	17.380663		
		50	18.475645		9.14257%
		51	19.639610		
		52	20.876906		
		53	22.192151		
		54	23.590256		
		55	25.076442		9.36818%
		56	26.656258		
		57	28.335602		
		58	30.120745		
		59	32.018352		
		60	34.035508		
		61	36.179745		
		62	38.459069		
		63	40.881991		
		64	43.457556		
		65	46.195382		
		66	49.105691		
		67	52.199350		
		68	55.487909		
		69	58.983647		
		70	62.699617		
		71	66.649693		
		72	70.848623		
		73	75.312087		
		74	80.056748		
		75	85.100323		
		76	90.461644		
		77	96.160727		

78	102.218853			
79	108.658641			
80	115.504135			
81	122.780896			
82	130.516092			
83	138.738606			
84	147.479138			
85	156.770324			
86	166.646854			
87	177.145606			
88	188.305779			
89	200.169043			
90	212.779693			
91	226.184814			
92	240.434457			
93	255.581828			
94	271.683483			
95	288.799542			
96	306.993914			
97	326.334530			
98	346.893606			
99	368.747903			
100	391.979021	331.6348251	391.979	10.05870%
101	416.673699			
102	442.924142			
103	470.828363			
104	500.490550			
105	532.021454			
106	565.538806			
107	601.167751			
108	639.041319			
109	679.300922			
110	722.096880			
111	767.588984			
112	815.947090			
113	867.351756			
114	921.994917			
115	980.080597			
116	1041.825674			
117	1107.460692			
118	1177.230716			
119	1251.396251			
120	1330.234214			
121	1414.038970			
122	1503.123425			
123	1597.820201			
124	1698.482874			
125	1805.487295			
126	1919.232994			
127	2040.144673			
128	2168.673787			
129	2305.300236			
130	2450.534151			
131	2604.917802			
132	2769.027624			
133	2943.476364			
134	3128.915375			
135	3326.037043			
136	3535.577377			
137	3758.318752			
138	3995.092833			
139	4246.783682			
140	4514.331054			
141	4798.733910			
142	5101.054146			
143	5422.420558			
144	5764.033053			
145	6127.167135			
146	6513.178665			
147	6923.508920			
148	7359.689982			
149	7823.350451			
150	8316.221530			
151	8840.143486			
152	9397.072526			
153	9989.088095			
154	10618.400645			
155	11287.359885			
156	11998.463558			
157	12754.366762			
158	13557.891868			
159	14412.039056			
160	15319.997517			
161	16285.157360			

162	17311.122274			
163	18401.722977			
164	19561.031525			
165	20793.376511			
166	22103.359231			
167	23495.870863			
168	24976.110727			
169	26549.605703			
170	28222.230862			
171	30000.231406			
172	31890.245985			
173	33899.331482			
174	36034.989365			
175	38305.193695			
176	40718.420898			
177	43283.681415			
178	46010.553344			
179	48909.218205			
180	51990.498951			
181	55265.900385			
182	58747.652110			
183	62448.754193			
184	66383.025707			
185	70565.156326			
186	75010.761175			
187	79736.439129			
188	84759.834794			
189	90099.704386			
190	95775.985762			
191	101809.872865			
192	108223.894856			
193	115042.000232			
194	122289.646246			
195	129993.893960			
196	138183.509279			
197	146889.070364			
198	156143.081797			
199	165980.095950			
200	176436.841995	149274.8289	176436.8	10.17572%
201	187552.363041			
202	199368.161912			
203	211928.356113			
204	225279.842548			
205	239472.472628			
206	254559.238404			
207	270596.470423			
208	287644.048060			
209	305765.623088			
210	325028.857342			
211	345505.675355			
212	367272.532902			
213	390410.702475			
214	415006.576731			
215	441151.991065			
216	468944.566502			
217	498488.074192			
218	529892.822866			
219	563276.070706			
220	598762.463161			
221	636484.498340			
222	676583.021735			
223	719207.752105			
224	764517.840487			
225	812682.464438			
226	863881.459698			
227	918305.991659			
228	976159.269133			
229	1037657.303088			
230	1103029.713183			
231	1172520.585113			
232	1246389.381976			
233	1324911.913040			
234	1408381.363562			
235	1497109.389466			
236	1591427.281002			
237	1691687.199706			
238	1798263.493287			
239	1911554.093364			
240	2031982.001246			
241	2159996.867324			
242	2296076.669966			
243	2440729.500174			
244	2594495.458685			
245	2757948.672582			

246	2931699.438954			
247	3116396.503609			
248	3312729.483336			
249	3521431.440786			
250	3743281.621556			
251	3979108.363714			
252	4229792.190628			
253	4496269.098637			
254	4779534.051851			
255	5080644.697118			
256	5400725.313036			
257	5740971.007758			
258	6102652.181246			
259	6487119.268665			
260	6895807.782591			
261	7330243.672894			
262	7792049.024286			
263	8282948.112816			
264	8804773.843924			
265	9359474.596091			
266	9949121.495645			
267	10575916.149870			
268	11242198.867312			
269	11950457.395953			
270	12703336.211898			
271	13503646.393247			
272	14354376.116022			
273	15258701.811331			
274	16220000.025445			
275	17241860.027048			
276	18328097.208752			
277	19482767.332904			
278	20710181.674877			
279	22014923.120394			
280	23401863.276979			
281	24876180.663428			
282	26443380.045224			
283	28109312.988074			
284	29880199.706322			
285	31762652.287820			
286	33763699.381953			
287	35890812.443016			
288	38151933.626926			
289	40555505.445423			
290	43110502.288484			
291	45826463.932659			
292	48713531.160416			
293	51782483.623522			
294	55044780.091804			
295	58512601.237588			
296	62198895.115556			
297	66117425.507836			
298	70282823.314830			
299	74710641.183664			
300	79417411.578235	67191298.54	79417412	10.17865%
301	84420708.507664			
302	89739213.143646			
303	95392783.571696			
304	101402528.936713			
305	107790888.259726			
306	114581714.220088			
307	121800362.215954			
308	129473785.035559			
309	137630633.492799			
310	146301363.402846			
311	155518349.297225			
312	165316005.302950			
313	175730913.637036			
314	186801961.196169			
315	198570484.751528			
316	211080425.290874			
317	224378492.084199			
318	238514337.085504			
319	253540740.321890			
320	269513806.962170			
321	286493176.800786			
322	304542246.939236			
323	323728408.496408			
324	344123298.231681			
325	365803066.020277			
326	388848659.179555			
327	413346124.707866			
328	439386930.564462			
329	467068307.190023			

330	496493610.542995			
331	527772708.007203			
332	561022388.611657			
333	596366799.094191			
334	633937907.437125			
335	673875995.605664			
336	716330183.328821			
337	761458984.878537			
338	809430900.925884			
339	860425047.684215			
340	914631825.688321			
341	972253630.706685			
342	1033505609.441210			
343	1098616462.836000			
344	1167829299.994670			
345	1241402545.894330			
346	1319610906.285680			
347	1402746393.381670			
348	1491119416.164720			
349	1585059939.383100			
350	1684918715.564230			
351	1791068594.644780			
352	1903905916.107400			
353	2023851988.822170			
354	2151354664.117960			
355	2286890007.957390			
356	2430964078.458710			
357	2584114815.401610			
358	2746914048.771910			
359	2919969633.844540			
360	3103927720.776740			
361	3299475167.185680			
362	3507342102.718380			
363	3728304655.189630			
364	3963187848.466580			
365	4212868682.919980			
366	4478279409.943930			
367	4760411012.770400			
368	5060316906.574940			
369	5379116871.689160			
370	5718001234.605570			
371	6078235312.385720			
372	6461164137.066020			
373	6868217477.701180			
374	7300915178.796360			
375	7760872835.060530			
376	8249807823.669340			
377	8769545716.560510			
378	9322027096.703820			
379	9909314803.796160			
380	10533601636.435300			
381	11197218539.530700			
382	11902643307.521200			
383	12652509835.895000			
384	13449617955.556400			
385	14296943886.756400			
386	15197651351.622100			
387	16155103386.774300			
388	17172874900.141100			
389	18254766018.850000			
390	19404816278.037500			
391	20627319703.553900			
392	21926840844.877800			
393	23308231818.105100			
394	24776650422.645700			
395	26337579399.272400			
396	27996846901.426500			
397	29760648256.216400			
398	31635569096.358000			
399	33628609949.428600			
400	35747212376.242600	30244017919	3.57E+10	10.17873%
401	37999286755.945800			
402	40393241821.570400			
403	42938016056.329400			
404	45643111067.878100			
405	48518627065.154400			
406	51575300570.259100			
407	54824544506.185500			
408	58278490810.075100			
409	61950035731.109900			
410	65852887982.169800			
411	70001619925.046500			
412	74411721980.324400			
413	79099660465.084900			

414	84082939074.385200
415	89380164236.071500
416	95011114582.944000
417	100996814801.669000
418	107359614134.175000
419	114123269824.628000
420	121313035823.579000
421	128955757080.465000
422	137079969776.534000
423	145716007872.455000
424	154896116368.420000
425	164654571699.631000
426	175027809716.707000
427	186054561728.860000
428	197775999117.778000
429	210235887062.198000
430	223480747947.117000
431	237560035067.785000
432	252526317277.055000
433	268435475265.510000
434	285346910207.237000
435	303323765550.293000
436	322433162779.961000
437	342746452035.099000
438	364339478513.310000
439	387292865659.648000
440	411692316196.206000
441	437628932116.567000
442	465199554839.911000
443	494507126794.825000
444	525661075782.899000
445	558777723557.222000
446	593980720141.327000
447	631401505510.230000
448	671179800357.375000
449	713464127779.889000
450	758412367830.022000
451	806192347003.314000
452	856982464864.522000
453	910972360150.987000
454	968363618840.500000
455	1029370526827.450000
456	1094220870017.580000
457	1163156784828.690000
458	1236435662272.900000
459	1314331108996.090000
460	1397133968862.840000
461	1485153408901.200000
462	1578718073661.980000
463	1678177312302.680000
464	1783902482977.750000
465	1896288339405.350000
466	2015754504787.880000
467	2142747038589.520000
468	2277740102020.660000
469	2421237728447.960000
470	2573775705340.180000
471	2735923574776.610000
472	2908286759987.540000
473	3091508825866.750000
474	3286273881896.360000
475	3493309136455.830000
476	3713387612052.550000
477	3947331031611.860000
478	4196012886603.400000
479	4460361698459.420000
480	4741364485462.360000
481	5040070448046.490000
482	5357594886273.420000
483	5695123364108.640000
484	6053916136047.490000
485	6435312852618.480000
486	6840737562333.440000
487	7271704028760.450000
488	7729821382572.360000
489	8216800129674.410000
490	8734458537843.900000
491	9284729425728.070000
492	9869667379548.930000
493	10491456424460.500000
494	11152418179201.500000
495	11855020524491.200000
496	12601886817534.200000
497	13395805687038.800000

498	14239741445322.300000			
499	15136845156377.600000			
500	16090466401229.400000	1.36134E+13	1.61E+13	10.17873%
501	17104165784506.800000			
502	18181728228930.700000			
503	19327177107353.400000			
504	20544789265116.600000			
505	21839110988819.000000			
506	23214974981114.600000			
507	24677518404924.800000			
508	26232202064435.100000			
509	27884830794494.500000			
510	29641575134547.600000			
511	31508994368024.100000			
512	33494061013209.600000			
513	35604186857041.800000			
514	37847250629035.500000			
515	40231627418664.700000			
516	42766219946040.600000			
517	45460491802641.100000			
518	48324502786207.500000			
519	51368946461738.600000			
520	54605190088828.100000			
521	58045317064424.300000			
522	61702172039483.000000			
523	65589408877970.400000			
524	69721541637282.600000			
525	74113998760431.400000			
526	78783180682338.500000			
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692	1999656601820860000.000000			
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696	2553221420845200000.000000			
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717	9210581173539920000.000000			
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789	74934545935669000000.000000			
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792	90008157914374100000.000000			
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794	101706428190347000000.000000			
795	108113933166339000000.000000			
796	114925110955819000000.000000			
797	122165392946035000000.000000			
798	129861812701635000000.000000			
799	138043106901838000000.000000			
800	146739822636654000000.000000	1.2415E+21	1.47E+21	10.17873%

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE ATTORNEY GENERAL
D.T.E. 05-27

Date: August 16, 2005

Responsible: Danny G. Cote, General Manager

RR-AG-100: Provide the number of employees who received certification and training through NACE and the nature of their certification.

Response: Bay State Gas Company currently has three (3) employees with an active NACE certification, including:

- Kenneth Santucci – Cathodic Protection Specialist CP-4
- Joan Furtado - Corrosion Technician
- Martin Langelier – Corrosion Technician

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 16, 2005

Responsible: Paul R. Moul, Consultant (Cost of Capital)

RR-DTE-51: Provide a copy of the Note evidencing the issuance of the remaining \$5 million in long term debt, authorized by the Department's financing order, DTE 04-80, which Bay State expects to issue before the completion of this proceeding. If necessary, update Mr. Moul's Schedules 1, 5 and 6.

Response: Attachment RR-DTE-51 includes the requested information that reflects the actual maturity of the 6.85% notes on June 21, 2005 and the actual issuance of \$10 million of new notes on June 21, 2005 and \$5 million of new notes on August 1, 2005. Specifically, Page 1 of Attachment RR-DTE-51 reflects an update to Schedule PRM-1. Page 2 of Attachment RR-DTE-51 reflects an update to Schedule PRM-5. Page 3 of Attachment RR-DTE-51 reflects an update to Schedule PRM-6, Page 2 of 2.

Bay State Gas Company
Cost of Capital and Fair Rate of Return
Pro-forma at December 31, 2004

Filed As Attachment RR-DTE-51
Page 1 of 3

<u>Type of Capital</u>	<u>Ratios</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long Term Debt	46.05%	6.12%	2.82%
Common Equity	<u>53.95%</u>	11.50%	<u>6.20%</u>
Total	<u>100.00%</u>		<u>9.02%</u>

Indicated levels of fixed charge coverage assuming that the Company could actually achieve its overall cost of capital:

Pre-tax coverage of interest expense based upon a 39.225% federal and state income tax rate

$$(13.02\% \div 2.82\%) \quad 4.62 \times$$

Post-tax coverage of interest expense

$$(9.02\% \div 2.82\%) \quad 3.20 \times$$

Bay State Gas Company
Capitalization and Related Capital Structure Ratios
For Ratesetting Purposes
Actual and Pro Forma at December 31, 2004

	<u>Actual Amount Outstanding</u>	<u>Ratesetting Adjustments</u>	<u>Pro Forma Adjustments</u>	<u>Ratesetting Capital Structure</u>	<u>Ratios</u>
Long Term Debt	\$ 178,500,000 ⁽¹⁾	\$ -	\$ 5,000,000 ⁽⁴⁾	\$ 183,500,000	46.05%
Common Equity					
Common Stock Issued	100				
Premium on Capital Stock	523,771,866				
Other Paid-In Capital	871,844				
Earned Surplus	41,703,840 ⁽²⁾				
Total Common Equity	<u>566,347,650</u>	<u>351,406,947 ⁽³⁾</u>	<u>-</u>	<u>214,940,703</u>	<u>53.95%</u>
Total Permanent Capital	<u>\$ 744,847,650</u>	<u>\$ 351,406,947</u>	<u>\$ 5,000,000</u>	<u>\$ 398,440,703</u>	<u>100.00%</u>

Notes: ⁽¹⁾ Includes current portion of long-term debt.

⁽²⁾ Excludes OCI Deficit

⁽³⁾ Removes the following items:

Investment in Associated Companies	\$ 117,973,478
Goodwill	233,433,469
Total	<u>\$ 351,406,947</u>

⁽⁴⁾ Reflects 2005 financing activity:

6.58% notes, due June 21, 2005	\$ (10,000,000)
5.25% notes, due Jun. 19, 2015	\$ 10,000,000
5.44% notes, due Jul. 31, 2015	5,000,000
Total	<u>\$ 5,000,000</u>

Source of Information: Company's 2004 Annual Return to the D.T.E. and Company provided data

Ray, Stone and Stone, Company												
Calculation of the Embedded Cost of Long Term Debt												
For Fiscal Year Ending December 31, 2004												
Class and Series of Obligation	Date of Maturity	Rate per Cent	Amount Outstanding		Interest Expense	Amortization of Debt Expense	Debt Expense					
9.20% notes, due June 6, 2011	06/06/11	9.20%	\$	8,500,000	\$	782,000	\$	7,584	\$	789,584		
6.58% notes, due June 21, 2005	06/21/05	6.58%		-		-		-		-		
6.43% notes, due Dec. 15, 2005	12/15/05	6.43%		10,000,000		714,627		714,627		714,627		
6.26% notes, due Feb. 15, 2006	02/15/06	6.26%		30,000,000		1,878,000		191,820		2,069,820		
5.40% notes, due March 21, 2013	03/21/13	5.40%		50,000,000		2,700,000		62,772 (1)		2,762,772		
5.95% notes, due Dec. 20, 2019	12/20/19	5.95%		35,000,000		1,953,000		36,105 (2)		1,991,088		
5.94% notes, due Dec. 20, 2024	12/20/24	5.94%		35,000,000		2,079,000		38,080		2,107,080		
5.20% notes, due Jul. 19, 2015	07/19/15	5.20%		10,000,000		520,000		720		520,720		
5.44% notes, due Jul. 31, 2015	07/31/15	5.44%		5,000,000		272,000		-		272,000		
Total Long-Term Debt			\$	183,500,000	\$	10,812,000	\$	400,749	\$	11,232,749		
Effective Interest Rate										6.12%		
Notes: (1) Includes annual amortization of Call Premium and Unamortized debt expense on issue that was redeemed:												
				Call Premium	\$	391,200						
				Unamortized debt expense		207,420						
				Subtotal		598,620						
				Write down expense		(144,846)						
				Total		\$ 453,774						
			12/01/05	03/21/13	88		Monthly	5,159	Annual	61,908		
(2)			Includes annual amortization of Call Premium and Unamortized debt expense on issue that was redeemed:									
				Call Premium	\$	381,300						
				Unamortized debt expense		1,283,380						
				Subtotal		1,664,680						
				Write down expense		(820,652)						
				Total		\$ 844,028						
			Amortization period:				Monthly		Annual			
			12/01/05	12/20/19	189	\$	3,089	\$		37,068		
			12/01/05	12/20/24	229	\$	2,260	\$		27,360		

Source of Information: Company's 2004 Annual Return to the D.T.E. and Company provided data

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 16, 2005

Responsible: Joseph A. Ferro, Manager Regulatory Policy

RR-DTE-73: Provide a revised annual base-rate adjustment mechanism tariff incorporating the Company's pretax rate of return (page 15 of 19), SIR revenues (page 14 of 19 and 12 of 19), and the rate adjustment table contained in section 11 (page 5 of the Tariff).

Response: The requested changes, which were asked of Mr. Skirtich at the July 15, 2005 hearing, were also asked of Mr. Ferro as part of Record Request DTE-126 at the August 3, 2005 hearing. Please see the revised Annual Base Rate Adjustment Mechanism (ABRAM) tariff, M.D.T.E. No. 63, provided in response to RR-DTE-126.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-DTE-081: For 1998 and 1999, explain any discrepancies regarding the failure rates of the Metscan units; and in addition, any changes in processes at the meter shop that led to more Metscan devices being redeployed in the field.

Response: The Company has conducted interviews with the employee involved with overseeing Metscan device testing in the Company's meter shop in 1998 and 1999. Although the individual does not recall the specific changes that were made to the testing process, he does recall that a manufacture's representative and a process engineer from Bay State reviewed the testing process and made some process changes that reduced the rejection rate of Metscan devices coming back from field deployment as part of the Company's periodic meter exchange program. This same process review resulted in improvements to the refurbishing processes. Despite these changes, the subsequent failure rate for devices installed on outside meters was unacceptably high and was the primary reason that the Company replaced the Metscan devices with radio-based Itron units.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 16, 2005

Responsible: Joseph A. Ferro, Manager Regulatory Policy

RR-DTE-123: Referring to AG-9-15 and Attachments AG-9-15 (B) and (C), pages 3 of 3, please explain why the CGA and the LDAF do not change for the G-42, G-52, G-43 and G-53 rate classes when comparing the test-year to the proposed rates whereas, these factors do change for all other rate classes. If the CGA and LDAF should change, please revise the affected schedules.

Response: The Company intentionally held the CGA rates constant (same for the test year and proposed rates) in calculating bill impacts for the G/T-42, 43, 52, and 53 customer classes. The genesis for this approach was threefold: (1) transportation customers' load made up the majority of the throughput (billing determinants) of these classes; (2) the Company held the gas cost rates constant for all transportation customers in its rate design calculations; and (3) in computing the strata bill impacts, the Company cannot distinguish between transportation and sales volumes. (Note that because in the rate design spreadsheet, Schedule JAF-2-1, the gas cost revenues for the sales customers reflect the difference between test year and proposed CGA rates, the strata bill impacts to these customer classes (including both sales and transportation) in Schedule JAF-2-6, pages 9 – 12, appeared larger than on line 410, page 16, of Schedule JAF-2-1.)

The reason for holding these rates constant for transportation customers and how total bill impacts were computed for these customers were stated in Exhibit BSG/JAF-2, page 8, lines 3 –13, of Mr. Ferro's testimony. As explained in Exhibit BSG/JAF-2 and to restate, for the customers in these four rate classes, total bill impacts were computed by including estimated direct and indirect gas costs. The actual seasonal/monthly gas cost rates by rate class, which were charged to sales customers throughout the test year and also used for the bill impacts of sales customers, were used to impute a level of gas commodity costs for firm transportation customers. These gas cost rates were multiplied by the billing determinants of the respective firm transportation service rate classes, in order to estimate gas costs. The gas costs for transportation customers were held constant at these levels and do not include the modifications proposed in this proceeding. The Company considered this a reasonable approach considering that the Company's proposed changes to charging for gas supply service do not apply to the competitive supplier service charged to transportation customers.

With respect to also holding the LDAF rates constant, also as explained in Exhibit BAG/JAF-2, page 7, the LDAC rates for all rate classes used for both the test year proposed rates were the actual LDAC rates in the test year, with the

exception that the incremental LDAC rate of \$0.0114 per therm associated with the shift from base rates to the LDAC of pension-related costs was used in the proposed rates. Attachment AG-9-15 (c) shows this Pension Tracker rate separately on lines 176 and 177.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 16, 2005

Responsible: Joseph A. Ferro, Manager Regulatory Policy

RR-DTE-124: Please redo Exhibit BSG JAF-2, Schedule JAF-2-3 but include the zero bills in the analysis of the block sizes.

Response: Please see Attachment RR-DTE-124.

**Bay State Gas Company
Rate Design - Block Sizes**

Witness: J. A. Ferro
DTE-05-27
Attachment RR-DTE-124

<u>Rate Class</u>	<u>Summer Block Size</u>			<u>Current Percent of Bills *</u>	<u>Proposed Percent of of Bills *</u>	<u>Current Percent of Therms</u>	<u>Therms @ 50% of Bills *</u>	<u>Proposed Percent of Therms</u>
	<u>Current</u>	<u>@ 50% of Bills *</u>	<u>Proposed</u>					
Residential Non-Heating	10	10	10	50.48%	50.48%	55.20%	55.20%	55.20%
Residential Heating	30	26	30	58.59%	58.59%	66.14%	60.71%	66.14%
G/T-40	35	7	flat	81.67%	100.00%	45.02%	15.17%	100.00%
G/T-50	80	38	flat	60.94%	100.00%	39.13%	21.98%	100.00%
G/T-41	300	102	flat	73.82%	100.00%	50.53%	23.82%	100.00%
G/T-51	500	631	flat	35.65%	100.00%	50.50%	59.44%	100.00%
G/T-42	2,200	1,037	flat	72.02%	100.00%	57.34%	34.50%	100.00%
G/T-52	8,000	4,938	flat	70.12%	100.00%	67.04%	51.02%	100.00%

<u>Rate Class</u>	<u>Winter Block Size</u>			<u>Current Percent of Bills *</u>	<u>Proposed Percent of of Bills *</u>	<u>Current Percent of Therms</u>	<u>Therms @ 50% of Bills *</u>	<u>Proposed Percent of Therms</u>
	<u>Current</u>	<u>@ 50% of Bills *</u>	<u>Proposed</u>					
Residential Non-Heating	12	14	12	45.43%	45.43%	45.10%	46.72%	45.10%
Residential Heating	90	132	125	28.37%	46.45%	53.03%	70.03%	67.61%
G/T-40	125	142	flat	45.82%	100.00%	41.52%	45.51%	100.00%
G/T-50	125	73	flat	60.00%	100.00%	44.89%	29.75%	100.00%
G/T-41	1,000	1,195	flat	40.26%	100.00%	50.21%	56.63%	100.00%
G/T-51	700	874	flat	37.27%	100.00%	51.56%	59.79%	100.00%
G/T-42	9,000	8,089	flat	56.28%	100.00%	68.74%	64.49%	100.00%
G/T-52	10,000	7,120	flat	68.04%	100.00%	70.51%	58.59%	100.00%

* Bills include all bills with zero use.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-DTE-133: Provide a copy of all service agreements between Bay State and NiSource Corporate Services Company since the merger.

Response: Attachment DTE-5-8 is a copy of the service agreement between NCSC and Bay State dated January 1, 2001. This same agreement was in effect during the test year.

Attachment AG-1-26 and Exhibit BSG/SHB-3 are copies of the service agreement between NCSC and Bay State dated March 31, 2005.

Attachment AG-19-6 is a redlined version of the January 1, 2001 agreement between NCSC and Bay State, indicating the changes to be made to the agreement.

For convenience, Attachment RR-DTE-133 (a) is a copy of the agreement dated January 1, 2001.

Attachment RR-DTE-133 (b) is a copy of an Interim Services Agreement between Bay State and NCSC date November 1, 2000.

Attachment RR-DTE-133 (c) is a copy of an agreement between Bay State and NIPSCO Industries Management Services Company (now NCSC) date April 26, 1999.

Service Agreement
BETWEEN
NISOURCE CORPORATE SERVICES COMPANY
AND
BAY STATE GAS COMPANY

Dated January 1, 2001
(To Take Effect January 1, 2001)

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SERVICE AGREEMENT

THIS AGREEMENT made January 1, 2001 between NISOURCE CORPORATE SERVICES COMPANY, a Delaware corporation (hereinafter called the Company), and BAY STATE GAS COMPANY, a Massachusetts corporation (hereinafter called the Client),

WITNESSETH:

Both the Company and the Client are corporate affiliates in the NiSource Inc. System, which is comprised of NiSource Inc. and its corporate subsidiaries. The Company, which is one of said subsidiaries, maintains an organization of specialists who are experienced in the problems and operations of public utilities and related businesses together with appropriate facilities and equipment through which it is prepared to furnish services, as hereinafter provided, to the Client, and to other affiliated corporations in the NiSource Inc. System (the Client together with such other affiliates are hereinafter collectively referred to as Clients).

The rendition of such services on a centralized basis enables the Clients to realize substantial economic and other benefits through (1) efficient use of personnel and equipment, (2) coordination of analysis and planning, and (3) availability of specialized personnel and equipment which the Clients cannot economically maintain on an individual basis.

The Company will render all services performed under all agreements at cost, including reasonable compensation for necessary capital procured through the issuance of capital stock, which cost shall be fairly and equitably apportioned among the Clients. To the extent that any charges for services or goods are rendered to the clients on the basis of estimated cost, they shall be readjusted to actual costs at least annually except in cases of construction, in which event such charges shall be adjusted upon completion of the individual projects in compliance with the Securities and Exchange Commission's Rule 90 promulgated under the Public Utility Holding Company Act of 1935.

WITNESSETH THAT the Company and the Client in consideration of the premises hereby agree as follows:

1. *Agreement to Furnish Services.* The Company agrees to furnish to the Client, upon the terms and conditions set forth in Schedule A, which is attached hereto and constitutes a part hereof, such of the services described in Article II of said Schedule A, at such times, for such periods and in such manner, as the Client may from time to time request. The Company will maintain an organization sufficient to render with efficiency and reasonable promptness such of the services described in Article II of said Schedule A as the Client may reasonably request, but it shall not be obligated to perform any services hereunder without reasonable notice.

2. *Termination.* This Agreement may be terminated, upon not less than thirty days' written notice, by either the Company or the Client; provided, however, that this Agreement shall be terminated automatically (i) to the extent that performance under this

Agreement may conflict with any rule, regulation or order of the Securities and Exchange Commission adopted before or after the making of this Agreement, or (ii) if this Agreement shall become invalid or illegal under any state law or under any rule, regulation or order of any state commission or other state body having jurisdiction in the premises.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date and year first above written.

NISOURCE CORPORATE SERVICES COMPANY

By: 

Name:

Its:

BAY STATE GAS COMPANY

By: 

Name: Robert C. Skaggs

Its: President and Chief Executive Officer

NISOURCE CORPORATE SERVICES COMPANY

Services Available to Clients Methods of Charging Therefor and Miscellaneous Terms and Conditions of Service Agreements

ARTICLE I. *Definitions*

- A. The term "Company" shall mean Nisource Corporate Services Company and its successors.
- B. The term "Parent" shall mean Nisource Inc. and its successors.
- C. The term "Associate" shall mean any subsidiary corporation of the Parent which is a party to a service Agreement with the Company.
- D. The term "Service Agreement" shall mean an agreement, of which this Schedule A constitutes a part, for the rendition of services by the Company.
- E. The term "Client" shall mean any corporation to which services may be rendered by the Company under a Service Agreement.

ARTICLE II. *Description of Services*

The services and facilities which the Company is prepared to render and furnish, as requested from time to time by the Clients, are set forth in general terms below. The details listed under each heading are intended to be illustrative rather than inclusive and are subject to modification from time to time in accordance with the state of the art and the needs of the Clients.

A. *Accounting and Statistical Services.* The Company will advise and assist the Clients in accounting and statistical matters, including the preparation and furnishing of financial, statistical and other related reports and analyses; and in addition, will advise and assist the Clients in matters related to cash requirements.

B. *Auditing Services.* The Company will conduct periodic audits of the general records of the Clients, will supervise the auditing of local and field office records of the Associates, and will coordinate the audit programs of the Clients with those of the independent accountants in the annual examination of their accounts.

C. *Budget Services.* The Company will advise and assist the Clients in matters involving the preparation and development budgets and budgetary controls.

D. *Business Promotion Services.* The Company will advise and assist the Associates in the preparation and use of advertising, in the development of residential, commercial and industrial business, and in the rendering of aid to local appliance distributors and dealers in the advertising and promotion of appliance sales.

E. *Corporate Services.* The Company will advise and assist the Clients in connection with corporate matters and with proceedings involving regulatory bodies.

F. *Data Processing, Tabulating and Calculating Services.* The Company will process data for the Clients by means of electronic, punch-card, magnetic tape, or other tabulating or calculating equipment maintained on a centralized basis. These services will include the computing, preparing and processing of service bills, and other bookkeeping, accounting, analytical, calculating and related functions.

G. *Depreciation Services.* The Company will advise and assist the Associates in matters pertaining to depreciation practices, including (1) the making of studies to determine the estimated service life of various types of plant, annual depreciation accrual rates, salvage experience, and trends in depreciation reserves indicated by such studies; (2) assistance in the organization and training of the depreciation departments of the Associates; and (3) dissemination to the Associates of information concerning current developments in depreciation practices.

H. *Economic Services.* The Company will advise and assist the Clients in matters involving economic research and planning and in the development of specific economic studies.

I. *Electronic Communications Services.* The Company will advise and assist the Clients in connection with the planning, installation and operation of radio networks, remote control and telemetering devices, microwave relay systems and all other applications of electronics to the fields of communication and control.

J. *Employee Services.* The Company will advise and assist the Clients in connection with employee relations matters, including recruitment, employee placement, training, compensation, safety, labor relations and health, welfare and employee benefits.

K. *Engineering and Research Services.* The Company will advise and assist the Associates in connection with the engineering phases of all construction and operating matters, including estimates of costs of construction, preparation of plans and designs, standardization of engineering procedures, and supervision and inspection of construction. The Company will also conduct both basic and specific research in fields related to the operations of the Associates.

L. *Gas Dispatching Services.* The Company will advise and assist the Associates in the dispatching of the gas supplies available to the Associates, and in determining and effecting the most efficient routing and distribution of such supplies in the light of the respective needs therefor and the applicable laws and regulations of governmental bodies. If requested by the Associates, the

Company will provide a central dispatcher or dispatchers to handle the routing and dispatching of gas.

M. *Geology and Production Services.* The Company will advise and assist the Associates in matters of geology and production, including the estimation of available reserves of the Associates and their suppliers, the selection of acreage to be leased or surrendered, the selection of storage areas, the location of wells, and methods of drilling and of oil and gas recovery.

N. *Information Services.* The Company will advise and assist the Clients in matters involving the furnishing of information to customers, employees, investors and other interested groups, and to the public generally, including the preparation of booklets, photographs, motion pictures and other means of presentation, and assistance to Clients in their advertising programs.

O. *Insurance Services.* The Company will advise and assist the Clients in general insurance matters, in obtaining policies, making inspections and settling claims.

P. *Methods Services.* The Company will advise and assist the Clients in the formulation of accounting practices and methods of procedure, in the standardization of forms, and with respect to the purchase, rental and use of mechanical and electronic computing equipment. The Company will also conduct such special studies as may be requested by the Clients.

Q. *Office Space.* As may from time to time be available, the Company will provide suitable space in its offices for the use of the Clients and their officers and employees.

R. *Officers.* Any Client may, with the consent of the Company, elect to any office of the Client any officer or employee of the Company whose compensation is paid by the Company. Services rendered to the Client by such person as an officer shall be billed by the Company to the Client and paid for as provided in Articles III, IV and V, and the Client shall not be required to pay any compensation directly to any such person.

S. *Operation and Planning Services.* The Company will advise and assist the Associates in connection with estimates of gas requirements and gas available, gas transmission, measurement, storage and distribution, construction requirements, negotiation of gas purchase and sale contracts, and other operating matters.

T. *Purchasing and Storage Services.* The Company will render advice and assistance to the Clients in connection with the standardization, purchase and storage of equipment, materials and supplies, and, upon request of the Client, the negotiation of purchases and the placing of purchase orders for account of the Client.

U. *Rate Services.* The Company will advise and assist the Associates in all rate matters, including the design and preparation of schedules and tariffs, the analysis of rate filings of producers

and pipeline suppliers, and the preparation and presentation of testimony and exhibits to regulatory authorities.

V. *Stationery Services.* The Company will maintain centralized equipment, facilities and personnel to purchase or produce, store and distribute to the Clients, as required by them, forms, stationery, charts, maps, pamphlets and other printed material.

W. *Tax Services.* The Company will advise and assist the Clients in tax matters, in the preparation of tax returns and in connection with proceedings relating to taxes.

X. *Transportation Services.* The Company will advise and assist the Clients in connection with the purchase, lease, operation and maintenance of motor vehicles and the operation of aircraft owned or leased by the Company or the Clients.

Y. *Miscellaneous Services.* The Company will render to any Client such other services, not hereinabove described, as may properly be rendered by the Company to such Client within the meaning and intent of the Public Utility Holding Company Act of 1935 and any other applicable statutes and the orders, rules and regulations of the Securities and Exchange Commission and any other governmental bodies having jurisdiction, as from time to time the Company may be equipped to render and such Client may desire to have performed.

ARTICLE III. *Compensation*

The amounts which the Client shall pay to the company shall be determined as provided in this Article III.

A. *Stationery and Data Processing Services.*

The Stationery Department and the Data Processing Department shall operate as separate units and the Client shall be charged directly by each such department for its services, at cost, which shall include all applicable overhead. In the alternative such departments may recover the costs of any service (including all applicable overhead) from the Client on the basis of fixed unit prices, adjusted from time to time, as required, to provide a reasonable balance between revenues and expenses. The same system shall apply to any other department having similar characteristics if the Company shall deem it appropriate.

B. *All Other Services and Miscellaneous Services Not Specifically Provided For.*

(1) *Specific Direct Salary Charges to Clients*

To the extent that time spent by the officers and employees of the Company engaged in rendering such other services and in rendering services not specifically provided for is related to

services rendered to a specific Client, a direct salary charge, computed as provided in Article IV, shall be made to such Client.

(2) *Apportioned Direct Salary Charges to Associates*

To the extent that the time spent by such officers and employees is related to services rendered to the Associates generally, or to any specified group of the Associates, a direct salary charge, computed as provided in Article IV, shall be made to the Associates generally, or to such specified group of the Associates, and allocated to each such associate upon such equitable basis or bases as the Board of Directors of the Company may from time to time specify, subject to concurrence of the Securities and Exchange Commission.

(3) *Direct Salary Charges for Services to the Company*

To the extent that time spent by any officer or employee of the Company is related to services rendered to the Company, a direct salary charge computed as provided in Article IV shall be made to Overhead.

(4) *Apportionment of Employee Benefits*

The employee benefit expenses which are related to direct salary charges made pursuant to sub-paragraphs (1), (2) and (3) of this paragraph B shall be apportioned among the several Clients and Overhead, as applicable, in the proportions which the respective direct salary charges made pursuant to the rendering of such services to each such Client and Overhead bear to the aggregate of such direct salary charges.

(5) *Other Expenses*

All expenses, other than salaries and employee benefit expenses incurred by the Company in connection with services rendered to a specific Client shall be charged directly to such Client. All such expenses incurred by the Company in connection with services rendered to the Associates generally or to any specified group of Associates shall be apportioned in the manner set forth in sub-paragraph (2) of paragraph B of this Article III for the apportionment of salary charges. All other such expenses shall be charged to Overhead, which shall include: the rents; depreciation; amortization; interest; taxes; non-productive time of officers and employees; compensation of employees performing office service functions; costs of general office supplies; charges for utility, maintenance and similar services; legal fees and fees of independent accountants; and all other such expenses normally treated as Overhead.

(6) *Apportionment of Overhead*

The Overhead shall be allocated, among the Clients in the same proportions which the direct salary charges to such Clients made pursuant to Sub-paragraphs (1) and (2) of this paragraph B, for services of officers and employees, bear to the aggregate of such direct salary charges.

ARTICLE IV. *Computation of Salary Charges and Application of Overhead*

A. *Direct Salary Charges*

The direct salary charge per hour which shall be made for the time of any officer or employee for services rendered in any calendar month shall be computed by dividing his total compensation for such month by the aggregate of (1) the number of scheduled working hours for which he was compensated, including hours paid for but not worked, and (2) hours worked in excess of his regular work schedule, whether or not compensated for.

B. *Suspense Account and Overhead Percentage Factors*

The apportionment of overhead among Clients pursuant to subparagraph (6) of paragraph B of Article III shall be effected by debits and credits to an Overhead Suspense Account to be maintained on the books of the Company as follows:

- (a) Such account shall be debited with the amounts of all Overhead.
- (b) Such account shall be credited, and each Client to which a direct salary charge is made pursuant to sub-paragraphs (1) and (2) of paragraph B of Article III for services of officers and employees shall be charged, with an amount representing a uniform percentage of each such direct salary charge. Such percentage shall be initially estimated, and from time to time adjusted, if required, in such manner that on an annual basis the credits made pursuant to this clause will substantially equal the debits made pursuant to foregoing clause (a).

ARTICLE V. *Billing*

A. *Monthly Bills and Detail Statement of Charges*

As soon as practicable after the close of each month the Company will issue to the Client an Invoice and Detail of Charges which will itemize the amounts due from the Client for services, overhead and expenses for such month, computed pursuant to Articles III and IV. All amounts so billed shall be paid by the Client within fifteen days after the receipt of the bill therefor.

To the extent required by law, all bills rendered by the Company to the Client shall be accompanied by a statement showing the manner in which such charge was determined and the cost to the Company of the service rendered.

B. *Information to be Furnished by Associate*

The Associate will forward to the Company from time to time, as requested, such financial and statistical information as the Company may need to compute the charges payable by such Associate upon such basis as may have been specified pursuant to Article III B(2) of this Schedule A.

ARTICLE VI. *Inspection of Records*

The Company agrees to keep its books and records available for inspection at all reasonable times by representatives of the Client in order that the correctness of the charges made by the Company for services to the Client may be verified by the Client.

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INTERIM SERVICES AGREEMENT

THIS INTERIM SERVICES AGREEMENT ("Agreement") is dated as of November 1, 2000 and is entered into by and between BAY STATE GAS COMPANY ("Client Company"), a Massachusetts corporation, and NiSource Corporate Services Company (formerly NIPSCO Industries Management Services Company) ("Corporate Services"), an Indiana corporation; hereinafter sometimes referred to collectively as the "Parties" and each singularly as a "Party."

WITNESSETH:

WHEREAS, Corporate Services is organized, staffed and equipped to render services and provide resources to Client Company and to its associate companies in the NiSource Inc. system as herein provided; and

WHEREAS, Client Company has a need for certain managerial, administrative, marketing, technical and other services, and certain resources; and

WHEREAS, Corporate Services desires to provide such services and resources to Client Company subject to the terms and conditions described herein; and

NOW, THEREFORE, in consideration of the premises and of the mutual agreements herein, the parties agree as follows:

1. Term and Termination.

A. This agreement is effective as of November 1, 2000.

B. Either Party may terminate this Agreement upon thirty (30) days' prior written notice to the other Party.

2. Description of Services.

Upon its receipt of Client Company's request therefor, Corporate Services will furnish to Client Company, upon the terms and conditions hereinafter set forth, such services, at such times, for such periods and in such manner as Client Company may from time to time request. The services which may be provided to Client Company hereunder are described as follows:

A. **Executive Services.** Advise and assist Client Company concerning its overall operations and general administrative functions and strategic planning. General and administrative management costs are allocated using the Global Allocation Factor. For strategic planning services, those costs directly associated with Client Company will be directly charged to Client Company. Other costs, associated with the existing portfolio of companies are allocated using the Global Allocation Factor.

B. Financial. Advise and assist Client Company with the establishment and maintenance of banking relationships, including accounts and account reconciliation, and preparation of financial reports. Costs directly associated with Client Company are directly charged to Client Company. Other costs, such as monitoring capital markets, investing activities, etc. will be allocated using the Global Allocation Factor.

C. Accounting. Advise and assist Client Company with the installation and maintenance of accounting systems, requirements of regulatory bodies with respect to accounting, studies of accounting procedures and practices to improve efficiency, book entries resulting from financial transactions, internal audits, employment of independent auditors, preparation and analysis of financial and operating reports and other statistical matters relating to customers of Client Company, preparation of annual reports, standardization of accounting and statistical forms in the interest of economy, and other accounting and statistical services. Costs directly associated with Client Company, such as the maintenance of the books and records, preparation of financial and statistical reports, tax filings, internal audit costs, etc. are charged directly to Client Company. Accounts payable processing will be charged using the Accounts Payable Ratio. Accounting costs associated with the preparation of consolidated financial reporting, consolidated tax matters, and other compliance matters will be allocated using the Global Allocation Factor.

D. General Administrative. Advise and assist Client Company with regard to legal, payroll, personnel, human resources and benefits, tax and insurance matters. Legal, tax and insurance costs directly associated with Client Company will be charged directly to Client Company. Supervision and general and administrative costs associated with these costs will be allocated using the Global Allocation Factor. Payroll, personnel, human resources and benefits costs will be allocated using the Number of Employees Ratio.

E. Budgeting. Advise and assist Client Company in matters involving the preparation and development of construction and operating budgets, cash and cost forecasts, and budgetary controls. Costs directly associated with Client Company will be charged directly to Client Company. Other administrative and general costs will be allocated using the Global Allocation Factor.

F. Business Promotion and Public Relations. Advise and assist Client Company in the development of marketing and sales, public relations and corporate communications programs, in the preparation and use of advertising and sales materials, and in the determination, execution and evaluation of such programs. Costs directly associated with Client Company will be charged directly to Client Company. Other costs, such as administrative and general costs, will be allocated using the Global Allocation Factor.

G. Systems and Procedures. Advise and assist Client Company in the formation of good operating practices and procedures, the standardization of forms, the purchase, rental, installation, maintenance and use of mechanical and electronic data

processing, computing and communications equipment, in conducting economic research and planning, and in the development of special economic studies. Costs directly associated with Client Company will be charged directly to Client Company. Other costs, such as administrative and general costs, will be allocated using the Global Allocation Factor.

H. Access to and Use of Facilities. Make available to Client Company access to, use of, or rights in facilities, products, processes, techniques, computer hardware and software, technical information, training aids and properties, intellectual property, vehicles, equipment, machines and other property, whether owned, leased, or licensed by Corporate Services. Costs directly associated with Client Company will be charged directly to Client Company. Other costs, such as administrative and general costs, will be allocated using the Global Allocation Factor.

I. Training. Assist Client Company in providing training to Client Company personnel, develop and make available training procedures, materials and facilities, and provide instructors. Costs directly associated with Client Company will be charged directly to Client Company. Other costs, including administrative and general costs, will be allocated using the Number of Employees Ratio.

J. Gas Supply Services. Provide gas supply procurement services and other related services, including those related to price risk management activities. Supervision and other administrative and general costs will be allocated using the Gas Supply Ratio.

K. Other Services. Advise and assist in connection with such other matters as Client Company may request and Corporate Services may be able to perform. Requested services will be directly charged to Client Company.

3. Provision of Personnel.

Where requested by Client Company, Corporate Services will loan its employees to Client Company. Loaned employees will be under the sole supervision and control of Client Company for such period or periods of time as are necessary to complete the work to be performed by such employees. Client Company will be responsible for the actions and activities of such employees while engaged in the performance of the work to the same degree as though such persons were employees of Client Company.

4. Compensation of Corporate Services.

As compensation for services rendered to Client Company by Corporate Services, Client Company hereby agrees to reimburse Corporate Services for all costs properly chargeable or allocable thereto. Such costs shall be determined in accordance with Appendix A attached hereto.

5. Limitation of Liability and Indemnification.

A. In performing the services hereunder (except to the extent such services are being performed by employees loaned to and under the supervision of Client Company), Corporate Services will exercise due care to assure that the services are performed in a workmanlike manner, meet the standards and specifications set forth in the applicable request with respect to such services, and comply with applicable standards of law and regulation. However, failure to meet these obligations shall in no event subject Corporate Services to any claims or liabilities other than to re-perform the work at cost such that the work fully complies with the request or standard. CORPORATE SERVICES MAKES NO OTHER WARRANTY WITH RESPECT TO ITS PERFORMANCE OF THE SERVICES, AND CLIENT COMPANY AGREES TO ACCEPT SUCH SERVICES WITHOUT FURTHER WARRANTY OF ANY NATURE. Client Company shall and does hereby indemnify and agree to save harmless and defend Corporate Services from the payment of any sum or sums of money on account of, or resulting from, claims or suits growing out of (i) injuries to or the death of any person, (ii) damage to or loss of any property and/or (iii) other damages in any way attributable to or arising out of the performance and prosecution of any project or work performed by or on behalf of Client Company for others, whether or not the same results or allegedly results from the claimed or actual negligence or breach of warranty of, or breach of contract or willful conduct by, Client Company or its employees, agents or subcontractors or any combination thereof. Further, Client Company shall and does hereby indemnify and agree to save harmless and defend Corporate Services (a) from any and all liens, garnishments, attachments, claims, suits, costs, attorneys' fees, cost of investigation and of defense resulting from, incurred in connection with, or relating to any such claims, (b) from the payment of any such sum or sums of money, and (c) from the payment of any penalties, fines, damages, suits or claims (and any liens or attachments asserted in connection therewith) arising out of (i) any alleged or actual violation of law, court order, or governmental agency rule or regulation committed by or existing with respect to Client Company or its employees, agents or subcontractors (except Corporate Services when not performing services hereunder), or (ii) any alleged or actual breaches of contract by Client Company, or (iii) any claims made by or on account of any employee, agent or subcontractor (except Corporate Services when not performing services hereunder or any employee or agent of Corporate Services where such claim does not arise specifically in connection with the performance of services hereunder) of Client Company, or (iv) services or labor performed, materials, provisions or supplies furnished or which have been purchased or contracted for by or on behalf of Client Company, its employees, agents or subcontractors (except Corporate Services when not performing services hereunder).

B. Corporate Services shall within a reasonable time after it receives notice of any claims, action, damages or liability against which it will expect to be indemnified pursuant to Article 5A, notify Client Company of such claims, actions, damages or liabilities. Thereafter, Client Company may at its own expense, upon notice to Corporate Services, defend or participate in the defense of such action or claim or any negotiation for settlement of such action or claim, provided that unless Client Company proceeds promptly and in good faith to pay or defend such action or claim, then Corporate Services shall have the right (but not the obligation), in good faith, upon ten days' notice

to Client Company, to pay, settle, compromise or proceed to defend any such action or claim without the further participation by Client Company. Client Company will immediately pay (or reimburse Corporate Services, as the case may be) any payments, settlements, compromises, judgments, costs or expenses made or incurred by Corporate Services in or resulting from the pursuit by Corporate Services of such right. If any judgment is rendered against Corporate Services and any such action defended by Client Company or from which Corporate Services is otherwise entitled to indemnification under Article 5A, or any lien attaches to the assets of Corporate Services in connection therewith, Client Company immediately upon such entry or attachment shall pay the judgment in full or discharge any such lien unless, at its expense and direction, appeal shall be taken under which the execution of the judgment and/or satisfaction of the lien is stayed. If and when a final and unappealable judgment is rendered against Corporate Services in any such action, Client Company shall forthwith pay such judgment or discharge such lien prior to the time that Corporate Services would be legally held to do so.

C. Client Company shall maintain at all times adequate levels of insurance to discharge financially its obligations under this Article 5.

6. Miscellaneous.

A. This Agreement shall be binding upon the successors and assigns of the Parties, provided that Corporate Services shall not be entitled to assign or subcontract out any of its obligations under this Agreement or under any request issued hereunder without the prior written approval of Client Company. This Agreement may not be modified or amended in any respect except in writing executed by the parties hereto. This Agreement shall be construed and enforced under and in accordance with the laws of the State of Indiana (without regard to conflicts of law principles). This Agreement may be executed in counterparts, each one of which when fully executed shall be deemed to have the same force and effect as if the original. No provision of this Agreement shall be deemed waived nor breach of this Agreement consented to unless such waiver or consent is set forth in writing and executed by the party hereto making such waiver or consent.

B. The provision of services by Corporate Services pursuant to this Agreement shall be subject to any limitation contained in any authorizations, rules or regulations of those governmental agencies, if any, having jurisdiction over the Parties, or such provision of services.

7. Confidential Information.

A. Confidential Information shall include all market information concerning the retail natural gas market and the retail electric market, and any other information designated as confidential by Client Company.

B. Confidential Information shall not include:

1. Information lawfully known to Corporate Services prior to the performance of such services other than through other work with or for Client Company; or

2. Information that is publicly disclosed through no act of Corporate Services or any of Corporate Services' employees, either prior or subsequent to Client Company's disclosures of such information to Corporate Services.

C. During the term of this Agreement and thereafter, except as Client Company may authorize in writing, Corporate Services shall and shall cause its employees to:

1. Treat and cause to be treated as confidential all Confidential Information;

2. Grant access to Confidential Information only to Corporate Services' employees performing services pursuant to this Agreement and Corporate Services' supervisory personnel needing access to Confidential Information;

3. Use confidential information only in connection with the performance of services pursuant to this Agreement;

4. Make copies of any tangible embodiment of Confidential Information only as necessary for the performance of such services;

5. Remove any tangible embodiment of Confidential Information from the premises of Client Company only with the express permission of Client Company; and

6. Return any or all tangible embodiments of Confidential Information to Client Company promptly following the request of Client Company, and in any event upon completion of work pursuant to the Agreement.

D. Notwithstanding the foregoing, Corporate Services may disclose Confidential Information to the extent that disclosure is required by a court or other governmental agency of competent jurisdiction, provided that Corporate Services shall provide notice to Client Company of the request for such disclosure promptly upon receiving such notice.

8. Regulatory Review.

The amounts of compensation, charges for service, price or any other amount to be paid by Client Company for services rendered by Corporate Services shall be subject to review and determination by the Massachusetts Department of Telecommunications and Energy in any proceeding brought under section ninety-three or ninety-four of

Appendix A

This Appendix sets forth the methodologies used to accumulate the costs of services performed by NiSource Corporate Services Company ("Corporate Services") and to assign or allocate such costs to its associate companies within the NiSource System ("Client Companies").

COST ASSIGNMENT

Corporate Services maintains an accounting system that enables costs to be identified by Work Request (W/R) number. These W/R numbers used in combination with Accounts, Resource Codes, Product/Service Codes and Client Company numbers will indicate whether the cost is a direct charge or the result of an allocated charge. The primary inputs to the accounting system are time reports, accounts payable invoices and journal entries. Charges for labor are calculated using the employees' hourly rate. All Corporate Services employees will maintain a record of their time. Those employees who provide services directly to Client Companies will charge their time on a daily basis using designated increments: (1) based on actual time records or (2) based on a fixed distribution that will be adjusted for exceptions. The fixed distribution percentages will be reviewed on a quarterly basis. The wages of those employees, such as administrative assistants and secretaries, who generally assist employees who provide services directly to Client Companies, will be allocated based on the allocation of the wages of the employees they assist. Time records will be maintained for three years. Indirect attributable costs are charged to the services performed in proportion to the directly assigned costs or other appropriate cost allocators.

Cost will be accumulated by work request number and assigned as follows:

1. Costs accumulated in a work request number for services specifically performed for a single Client Company will be directly assigned or billed to such Client Company.
2. Costs accumulated in a work request number for services specifically performed for two or more Client Companies will be distributed among such Client Companies using methods determined on a case-by-case basis consistent with the nature of the work performed and on one of the allocation methods described below.
3. Costs accumulated in a work request number for services of a general nature which are applicable to all Client Companies will be allocated among all Client Companies, including NiSource Inc., and billed to them using the Global Allocation Factor described below.

Cost Allocation

Corporate Services uses cost allocation methods designed to fully distribute costs.

Corporate Services' cost allocation methodology is comprised of the following three steps:

1. To "direct charge" all labor, materials and other expenses to Client Companies whenever feasible.
2. To allocate directly attributable costs to Client Companies based upon a measurable cost causing relationship, i.e., payroll department costs are allocated on the number of employees for each Client Company.
3. To allocate indirectly attributable costs that are common to all Client Companies, including NiSource Inc., using the Global Allocation Factor taking into consideration the relative size of each entity with regards to gross revenues, gross payroll expense and plant.

Costs that can be directly attributed to direct charges are allocated in proportion to the direct charges or other appropriate cost allocations. For example, direct labor charged to prepare financial statements for a specific Client Company not only includes the direct payroll charge (the hourly rate times the hours reported) but also includes a proportional share of that individual's payroll overhead cost, and such other overheads as common asset usage, occupancy charges and management overhead charges (commonly referred in aggregate as an Administrative and General Overhead).

General and administrative costs that are not associated with a specific, identifiable, causal relationship are pooled and allocated to all Client Companies, including NiSource Inc.

ALLOCATION METHODS

ALLOCATIONS RELATED TO DIRECT LABOR CHARGES

The following allocations will be applied to the Direct Labor Charges:

Payroll Overhead Charge will be calculated to recover costs associated with labor, such as pension, benefits, lost time and payroll taxes. The payroll overhead costs will be charged to Client Companies based on direct labor charges. The rate is computed by dividing the annual payroll overhead expenses by the annual base labor dollars.

Other Allocations applied to Direct Labor Charges will consist of the following:

1. Common Asset Usage Overhead:

The Common Asset Usage Overhead allocates the cost of furniture and desktop equipment (including PC's) used by Corporate Services. The rate is calculated by dividing the economic carrying costs of the assets by the total actual labor dollars

of employees using those assets. This overhead is directly applied to all Corporate Services labor charged or allocated to Client Companies.

2. Occupancy Overhead:

The Occupancy Overhead allocates costs related to the workspace occupied by Corporate Services employees. The rate is calculated by dividing the economic carrying costs for the buildings by the total actual labor dollars of employees working in those buildings. This overhead is directly applied to all Corporate Services labor charged or allocated to Client Companies.

3. Management Overhead:

This overhead represents the management cost of a function within Corporate Services. It is based on the ratio of Corporate Services supervisory wages to all other wages. This fixed rate is applied to all direct labor charged to Client Companies.

AN ALTERNATIVE ALLOCATION APPLIED TO DIRECT LABOR CHARGES OR OTHER DIRECT CHARGES

An alternative allocation applied to direct labor charges or other direct charges is commonly referred to as an Administrative and General Support Adder. This overhead is a general overhead used in place of other specific administrative and general support overheads and is added to total costs of services. The purpose is to recover indirect administrative and general expenses incurred and not otherwise charged directly to specific Client Companies for certain activities. The adder also includes expenses associated with office facilities, including furniture and office equipment, used in performing these administrative functions.

ALLOCATIONS RELATED TO DISTRIBUTED SERVICES

The following ratios will be used to allocate costs for services not directly assigned but pooled and allocated based on a causal measurement:

Number of Employees Ratio - Based on the number of employees benefiting from the performance of a service. This ratio will be determined annually based on actual count of applicable employees at the end of the previous calendar year and may be adjusted periodically due to a significant change.

Accounts Payable Ratio - Based on the number of invoices processed for each of the specific Client Companies. This ratio is determined annually based on the actual count of invoices at the end of the previous calendar year and may be adjusted periodically due to a significant change.

Gas Supply Ratio: Based on the number of decatherms purchased for a specific Client Company at the end of the previous year and may be adjusted periodically due to a significant change.

Global Allocation Factor - This formula will be determined annually based on the average of gross plant (original plant in service), gross payroll charges (salaries and wages, including overtime, shift premium and lost time, but excluding pension, payroll taxes and other employee benefits) and gross revenues during the pervious calendar year and may be adjusted for any known and reasonable quantifiable events or at such time as may be required due to significant changes. This formula is commonly referred to as the "Massachusetts Formula."

Chapter 164 of the Massachusetts General Laws. If the Massachusetts Department of Telecommunications and Energy determines that such amounts are excessive and orders this Agreement to be terminated, then it shall be terminated effective the date of such order without penalty to either party for such termination.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed in their respective corporate names by their respective Presidents or one of their respective Vice Presidents as of the day and year first above written.

BAY STATE GAS COMPANY

NISOURCE CORPORATE SERVICES
COMPANY

By: Kenneth M. Margossian

By: Stephen P. Smith

Name: Kenneth M. Margossian

Name: Stephen P. Smith

Title: Executive Vice President

Title: President &
Chief Operating Officer

SERVICES AGREEMENT

THIS AGREEMENT (this "Agreement") is dated as of April 26, 1999 and is entered into by and between NIPSCO Industries Management Services Company, an Indiana corporation and other utility subsidiaries, hereinafter referred to as "NIMSCO" and Bay State Gas Company, a Massachusetts corporation, hereinafter referred to as the "Affiliate".

WITNESSETH:

WHEREAS, NIMSCO is organized, staffed and equipped to render services and provide resources to Affiliate as herein provided; and

WHEREAS, Affiliate may have a need for certain managerial, administrative, marketing, technical and other services, and certain resources; and

WHEREAS, NIMSCO desires to provide such services and resources to Affiliate subject to the terms and conditions described herein; and

NOW, THEREFORE, in consideration of the premises and of the mutual agreements herein, the parties agree as follows:

1. Term and Termination.

A. This Agreement shall be effective the date first entered above and continue in effect until terminated in accordance with the provisions of this Agreement.

B. Either party may terminate this Agreement upon thirty (30) days' prior written notice to the other party.

2. Description of Services.

Upon its receipt of Affiliate's request therefore, NIMSCO will furnish to Affiliate, upon the terms and conditions hereinafter set forth, such services, at such times, for such periods and in such manner as Affiliate may from time to time request. The services which may be provided to Affiliate hereunder are described as follows:

A. Management Services.

Advise and assist Affiliate concerning its overall operations and general administrative functions.

B. Financial.

Advise and assist Affiliate with the establishment and maintenance of banking relationships, including accounts and account reconciliation, and preparation of financial reports.

C. Accounting.

Advise and assist Affiliate with the installation and maintenance of accounting systems, requirements of regulatory bodies with respect to accounting, studies of accounting procedures and practices to improve efficiency, book entries resulting from financial transactions, internal audits, employment of independent auditors, preparation and analysis of financial and operating reports and other statistical matters relating to customers of Affiliate, preparation of annual reports, standardization of accounting and statistical forms in the interest of economy, and other accounting and statistical services.

D. General Administrative.

Advise and assist Affiliate with regard to legal, payroll, personnel, human resources and benefits, tax and insurance matters.

E. Budgeting.

Advise and assist Affiliate in matters involving the preparation and development of construction and operating budgets, cash and cost forecasts, and budgetary controls.

F. Business Promotion and Public Relations.

Advise and assist Affiliate in the development of marketing and sales, public relations and corporate communications programs, in the preparation and use of advertising and sales materials, and in the determination, execution and evaluation of such programs.

G. Systems and Procedures.

Advise and assist Affiliate in the formation of good operating practices and procedures, the standardization of forms, the purchase, rental, installation, maintenance and use of mechanical and electronic data processing, computing and communications equipment, in conducting economic research and planning, and in the development of special economic studies.

H. Access to and Use of Facilities.

Make available to Affiliate access to, use of, or rights in facilities, products, processes, techniques, computer hardware and software, technical information, training aids and properties, intellectual property, vehicles, equipment, machines and other property, whether owned, leased, or licensed by NIMSCO.

I. Training.

Assist Affiliate in providing training to Affiliate personnel, develop and make available training procedures, materials and facilities, and provide instructors.

J. Gas Supply Services.

Provide gas supply procurement services and other related services, including those related to price risk management activities.

K. Other Services.

Advise and assist in connection with such other matters as Affiliate may request and NIMSCO may be able to perform.

3. Provision of Personnel

Where requested by Affiliate, NIMSCO will loan its employees to Affiliate. Loaned employees will be under the sole supervision and control of Affiliate for such period or periods of time as are necessary to complete the work to be performed by such employees. Affiliate, will be responsible for the actions and activities of such employees while engaged in the performance of the work to the same degree as though such persons were employees of Affiliate.

4. Compensation of Management Services.

As compensation for services rendered to Affiliate by NIMSCO, Affiliate hereby agrees to reimburse NIMSCO for all costs properly chargeable or allocable thereto. Such costs shall be determined in accordance with Articles 4A and 4B below:

A. Direct Cost

Direct Cost consists of Direct Labor Costs, Direct Labor Benefits, Material, Vehicle and Equipment Usage, and Meals, Lodging, Transportation and Miscellaneous Expenses. Direct Labor Costs shall be based on the wage rates of assigned employees and the actual number of hours devoted to providing the service. Direct Labor Benefits include the costs of paid, excused absences, such as vacations and holidays, and shall be based on a recovery factor applied to the Direct Labor Costs. Material which is supplied by NIMSCO shall be billed by NIMSCO at its invoice cost, plus a storage, freight and handling expense. Vehicle and Equipment Usage shall be billed at the appropriate cost thereof by vehicle class, which costs shall provide for the allocation of all direct and indirect costs associated with NIMSCO's fleet operation. Meals, Lodging, Transportation and Miscellaneous Expenses shall be billed at actual cost.

B. Indirect Cost

Indirect Cost consists of Indirect Labor Cost, and Administrative and General Expenses. Indirect Labor Costs include pension costs, health and welfare costs, insurance, payroll taxes, employee savings plan, and similar items. Administrative and General Expense shall be based on NIMSCO's administrative and general expense and total applicable costs. Each type of Indirect

Cost shall be applied to Direct Labor Costs and Direct Labor Benefits to the extent reasonably allocable thereto. There shall be no duplication of Direct Costs and Indirect Costs.

5. Limitation of Liability and Indemnification.

A. In performing the services hereunder (except to the extent such services are being performed by employees loaned to and under the supervision of Affiliate), NIMSCO will exercise due care to assure that the services are performed in a workmanlike manner, meet the standards and specifications set forth in the applicable request with respect to such services, and comply with applicable standards of law and regulation. However, failure to meet these obligations shall in no event subject NIMSCO to any claims or liabilities other than to re-perform the work at cost such that the work fully complies with the request or standard. NIMSCO MAKES NO OTHER WARRANTY WITH RESPECT TO ITS PERFORMANCE OF THE SERVICES, AND AFFILIATE AGREES TO ACCEPT SUCH SERVICES WITHOUT FURTHER WARRANTY OF ANY NATURE. Affiliate shall and does hereby indemnify and agree to save harmless and defend NIMSCO from the payment of any sum or sums of money on account of, or resulting from, claims or suits growing out of (i) injuries to or the death of any person, (ii) damage to or loss of any property and/or (iii) other damages in any way attributable to or arising out of the performance and prosecution of any project or work performed by or on behalf of Affiliate for others, whether or not the same results or allegedly results from the claimed or actual negligence or breach of warranty of, or breach of contract or willful conduct by, Affiliate or its employees, agents or subcontractors or any combination thereof. Further, Affiliate shall and does hereby indemnify and agree to save harmless and defend NIMSCO (a) from any and all liens, garnishments, attachments, claims, suits, costs, attorneys' fees, cost of investigation and of defense resulting from, incurred in connection with, or relating to any such claims, (b) from the payment of any such sum or sums of money, and (c) from the payment of any penalties, fines, damages, suits or claims (and any liens or attachments asserted in connection therewith) arising out of (i) any alleged or actual violation of law, court order, or governmental agency rule or regulation committed by or existing with respect to Affiliate or its employees, agents or subcontractors (except NIMSCO when not performing services hereunder), or (ii) any alleged or actual breaches of contract by Affiliate, or (iii) any claims made by or on account of any employee, agent or subcontractor (except NIMSCO when not performing services hereunder or any employee or agent of NIMSCO where such claim does not arise specifically in connection with the performance of services hereunder) of Affiliate, or (iv) services or labor performed, materials, provisions or supplies furnished or which have been purchased or contracted for by or on behalf of Affiliate, its employees, agents or subcontractors (except NIMSCO when not performing services hereunder).

B. NIMSCO shall within a reasonable time after it receives notice of any claims, action, damages or liability against which it will expect to be indemnified pursuant to Article 5A, notify Affiliate of such claims, actions damages or liabilities. Thereafter, Affiliate may at its own expense, upon notice to NIMSCO, defend or participate in the defense of such action or claim or any negotiation for settlement of such action or claim, provided that unless Affiliate proceeds promptly and in good faith to pay or defend such action or claim, then NIMSCO shall have the right (but not the obligation), in good faith, upon ten days' notice to Affiliate, to pay, settle, compromise or proceed to defend any such action or claim without the further participation by Affiliate. Affiliate will immediately pay (or reimburse NIMSCO, as the case may be) any payments, settlements, compromises, judgments, costs or expenses made or incurred by NIMSCO in or resulting from the pursuit by NIMSCO of such right. If any

judgment is rendered against NIMSCO and any such action defended by Affiliate or from which NIMSCO is otherwise entitled to indemnification under Article 5A, or any lien attaches to the assets of NIMSCO in connection therewith, Affiliate immediately upon such entry or attachment shall pay the judgment in full or discharge any such lien unless, at its expense and direction, appeal shall be taken under which the execution of the judgment and/or satisfaction of the lien is stayed. If and when a final and unappealable judgment is rendered against NIMSCO in any such action, Affiliate shall forthwith pay such judgment or discharge such lien prior to the time that NIMSCO would be legally held to do so.

C. Affiliate shall maintain at all times adequate levels of insurance to discharge financially its obligations under this Article 5.

6. Miscellaneous.

A. This Agreement shall be binding upon the successors and assigns of the parties, provided that NIMSCO shall not be entitled to assign or subcontract out any of its obligations under this Agreement or under any request issued hereunder without the prior written approval of Affiliate. This Agreement may not be modified or amended in any respect except in writing executed by the parties hereto. This Agreement shall be construed and enforced under and in accordance with the laws of State of Indiana (without regard to conflicts of law principles). This Agreement may be executed in counterparts, each one of which when fully executed shall be deemed to have the same force and effect as if the original. No provision of this Agreement shall be deemed waived nor breach of this Agreement consented to unless such waiver or consent is set forth in writing and executed by the party hereto making such waiver or consent.

B. The provision of services by NIMSCO pursuant to this Agreement shall be subject to any limitation contained in any authorizations, rules or regulations of those governmental agencies, if any, having jurisdiction over the parties, or such provision of services.

7. Confidential Information.

A. Confidential Information shall include all market information concerning the retail natural gas market and the retail electric market, and any other information designated as confidential by Affiliate.

B. Confidential Information shall not include:

1. Information lawfully known to NIMSCO prior to the performance of such services other than through other work with or for Affiliate; or
2. Information that is publicly disclosed through no act of NIMSCO or any of NIMSCO's employees, either prior or subsequent to Affiliate's disclosures of such information to NIMSCO.

C. During the term of the Agreement and thereafter, except as Affiliate may authorize in writing, NIMSCO shall and shall cause its employees to:

1. Treat and cause to be treated as confidential all Confidential Information;

2. Grant access to Confidential Information only to NIMSCO's employees performing services pursuant to this Agreement and NIMSCO's supervisory personnel needing access to Confidential Information;
3. Use Confidential information only in connection with the performance of services pursuant to this Agreement;
4. Make copies of any tangible embodiment of Confidential Information only as necessary for the performance of such services;
5. Remove any tangible embodiment of Confidential Information from the premises of Affiliate only with the express permission of Affiliate; and
6. Return any or all tangible embodiments of Confidential Information to Affiliate promptly following the request of Affiliate, and in any event upon completion of work pursuant to the Agreement.

D. Notwithstanding the foregoing, NIMSCO may disclose Confidential Information to the extent that disclosure is required by a court or other governmental agency of competent jurisdiction, provided that NIMSCO shall provide notice to Affiliate of the request for such disclosure promptly upon receiving such notice.

8. MDTE Review. The amounts of compensation, charges for service, price or any other amount to be paid by Affiliate for services rendered by NIMSCO shall be subject to review and determination by the MDTE in any proceeding brought under section ninety-three or ninety-four of Chapter 164 of the Massachusetts General Laws. If the MDTE determines that such amounts are excessive and orders this Agreement to be terminated, then it shall be terminated effective the date of such order without penalty to either party for such termination.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in their respective corporate names by their respective Presidents or one of their respective Vice Presidents as of the day and year first above written.

NIPSCO Industries Management Services Company

By: 

Its: Sr. Exec. Vice President & CFO

Bay State Gas Company

By: 

Its: President

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Danny G. Cote, General Manager

RR-DTE-155: Refer to BSG/DGC-12 (steel) and BSG/DGC-13 (high density plastic pipe). Provide the Department with one of the types of pipe that have been taken out for repair.

Response: While the Company does not have a section of cathodically protected pipe that it has taken out of service for repair, it does have a section of high density plastic that was removed due to contractor (third party) damage. See RR-DTE-155 Exhibit 1 for a sample of this high density plastic pipe.¹

¹ The Company is only providing this sample pipe to the Department.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 15, 2005

Responsible: Lawrence R. Kaufmann

RR-DTE-162: Refer to Exh.BSG/Rebuttal-5, at 2. The Company stated that Dr. Pereira's recommended changes to the PBR will generally not support the Department's objectives for effective regulation. Please elaborate on this.

Response: Dr. Pereira's recommended changes to the Company's PBR plan are ill-founded, arbitrary, inconsistent with Department precedent, and contrary to the Department's objectives for effective regulation. Implementing Dr. Pereira's proposal would represent a significant step backwards in the evolution of the Department's regulatory policy. In my opinion, this PBR proposal would also have negative repercussions for other energy utilities in the State and, ultimately, for Massachusetts ratepayers.

It should first be noted that Dr. Pereira's proposal for a partial PBR – or, in his most recent terminology, “different X factors for different cost components” – rests on a false premise. Dr. Pereira claims there is evidence that Bay State improved its O&M cost performance, but not its non-O&M cost (*i.e.* capital cost) performance, while it was under the rate freeze. For example, in his response to Data Request DTE-DOER-1-6, Dr. Pereira says “the justification for the rate freeze proposal to a portion of the Company's costs (*i.e.* its capital costs) is a result of the lack of evidence to indicate that the previous rate freeze had any positive impacts on total costs or costs other than O&M costs.” He attempts to support this claim using data put forward in my response to Data Request DTE-4-36. Using data presented in my response, Dr. Pereira compares changes in the Company's capital quantity index over the 1993-2000 period to changes in its capital quantity index over the 1998-2000 period. These comparisons are simply meaningless, since the periods Dr. Pereira uses do not correspond to the years before (*i.e.* 1993-98) and during (*i.e.* 1998-2003) Bay State's rate freeze.

Moreover, Dr. Pereira's analysis distorts the real efficiency gains that the Company achieved in its use of capital inputs during the freeze. These gains are evident in my response to DTE-4-36. The table presented in this response shows that Bay State's capital input quantity index grew by 3.04% per annum in the pre-freeze period (1993-98), compared with 1.21% growth per annum in the freeze period (1998-2003). Bay State thus achieved a 60% deceleration in the growth of its capital inputs while under the rate freeze (*i.e.* $1.21\% = 3.04\% \times 0.4$, so the capital input trend

under the rate freeze is 60% slower than the trend before the rate freeze). This improvement in Bay State's capital cost performance is comparable to the improvement in Boston Gas's O&M cost performance that the Department cited in the Order in DTE 03-40. In that proceeding, the Department noted that Boston Gas's O&M costs grew by 1.9% per annum before PBR and only 0.6% per annum during PBR, which is equal to a 68% deceleration. The Department used this evidence to infer cause and not coincidence regarding the salutary impacts of PBR on the Company's efficiency, and it ultimately approved a 0.3% consumer dividend for Boston Gas. Bay State's *capital* cost performance during its rate freeze is comparable to the trends cited favorably in DTE 03-40 and used by the Department to support a consumer dividend value of 0.3% which, in turn, is the value of Bay State's proposed consumer dividend. Dr. Pereira ignores this evidence and its relationship to the DTE 03-40 precedent, which directly undermines his claim that 0.3% is an appropriate consumer dividend when indexing is applied to O&M costs but not when it is applied to capital costs.¹

In addition, Dr. Pereira either does not understand or misrepresents the regulatory precedents he cites in support of his partial PBR plan. For example, in his response to DTE-DOER-1-3, he cites an early PBR plan for San Diego Gas and Electric and the "first generation PBR plans for electricity distribution companies in Ontario" as examples where different indexing formulas were applied to "sunk" capital costs and O&M costs. In fact, the Ontario electricity distribution plan did not apply different indexing formulas to O&M and capital costs, although it did construct an industry-specific inflation measure (e.g. as opposed to the GDP-PI as an inflation measure) which used different input price subindexes for capital and O&M inputs. In this same response, Dr. Pereira also claims that the PBR plan approved for Enbridge Gas Distribution in Ontario was an example "where a PBR has been applied to a portion of the Company's costs due to lack of unavailable data." In fact, the "lack of unavailable data" had nothing to do with why a targeted PBR plan was applied to Enbridge's O&M costs. This targeted plan was designed as a "trial" that was supposed to be a bridge to comprehensive PBR, but Enbridge did not renew the plan when it expired. One reason the plan was not renewed was that consumers did not believe they benefited under the plan. This was due, in part, to the fact that the plan did not include an earnings sharing mechanism (ESM) and this, in turn, was partially due to the fact that the plan itself was partial or "targeted," so it was considered more difficult to craft an ESM that solely reflected the gains associated with the targeted cost components.

¹ It should also be noted that Dr. Pereira compares the capital quantity indexes of Bay State to those of other Northeast gas distributors in his response to DTE-DOER-1-6. Again, this comparison is meaningless, since the values of capital stocks can differ dramatically across distributors because of differences in the spatial patterns of customers in service territories, the age of the capital stock, and similar factors beyond management control. A rigorous comparison of capital input quantities across distributors would have to control for such factors through econometric methods, which Dr. Pereira has failed to do.

Because Dr. Pereira relies heavily on precedents from Ontario to support his proposal for a partial PBR (or, using recent terminology, a PBR with different X factors for different cost components), it is instructive to consider the most recent regulatory developments in Ontario. Those developments are part of the record in this case, since I was an advisor to Ontario's Energy Board (OEB) during the 2004-2005 Natural Gas Forum conducted in the Province, and in RR-DTE-26 the Department asked me to "provide studies from other countries that have examined the benefits of Performance Based Ratemaking, including all other documents pertaining to the Ontario and Southern California cases." In response, I provided my report to the OEB [*Discussion Paper on Rate Regulation in Ontario* (September 2004)] as well as the OEB's Final Report from the Forum [*Natural Gas Regulation in Ontario: A Renewed Policy Framework* (March 2005)]. The latter document explicitly considered the issue of whether future PBRs in Ontario should be comprehensive or targeted. The OEB wrote

A related matter is whether the IR (incentive regulation) framework should be comprehensive or targeted – in other words, whether the plan should apply to all costs or only to some costs. The targeted approach was tried with the Enbridge plan. The comprehensive approach was used for Union and for Ontario's local electricity distribution companies, and it is the more common approach in other jurisdictions. The Board's view is that the targeted approach did not work effectively because it diluted and distorted the incentives, and that a comprehensive model is preferable (p. 22).

Three points from this passage and the OEB's Final Report more generally are worth noting. First, the OEB explicitly states that the electricity distribution PBR plans were "comprehensive" and the Enbridge PBR plan was targeted, whereas Dr. Pereira's response to DTE-DOER-1-3 leaves the very strong impression that both were targeted in some sense. Second, the OEB Report refers to the Enbridge PBR as a "trial" plan. Third, and most importantly, the Enbridge PBR plan is in essence identical to that proposed by Dr. Pereira for Bay State in this case: it featured an indexing formula that applied only to O&M costs, while capital costs were frozen during the term of the plan. The OEB explicitly considered, and rejected, the Enbridge plan as a model for future rate regulation in Ontario, citing the diluted and distorted incentives it created. The OEB will instead pursue comprehensive PBR as the basis for gas distribution regulation in the Province. Far from supporting Dr. Pereira's recommendation, the Ontario precedents he cites highlight the flaws in his approach and the superiority of the Company's alternative.

It should also be recognized that Dr. Pereira's proposal is not consistent with Department precedents. In his response to DTE-DOER-1-5, he implies that this is not the case, since the Department has approved both rate freezes and index-based PBR plans, and his proposal simply

combines “different X factors to reflect differing expectations for cost performance over the term of the PBR plan.” As previously discussed, the premise of “differing expectations for cost performance” which motivates Dr. Pereira’s recommendation is not valid but, on a more fundamental level, it should be recognized that his proposed approach is entirely *ad hoc*. Dr. Pereira arbitrarily chooses rate adjustment formulas for different cost components without providing a theoretical foundation or empirical evidence to support any of his recommendations. Simply noting that the Department has chosen different regulatory approaches for different situations (rate freezes largely for mergers, rate indexing in more conventional regulatory proceedings) does not mean it is appropriate to cut and paste these approaches at will. Doing this would be no more valid than applying different ROEs for different types of capital (e.g. older capital versus capital additions since the last rate case) simply because the Department has chosen different allowed ROEs at different times. The terms of PBR formulas in Massachusetts have been developed through a well-defined theoretical framework that has been applied to telecom and energy utilities in the State. This framework also has ample precedent in other jurisdictions. Dr. Pereira is asking the Department to overturn this well-established methodology, and the accretion of regulatory evidence and experience in Massachusetts, in favor of arbitrarily-applied rate adjustments that have no basis in either economic reasoning or empirical evidence.

In addition to leading to more arbitrary outcomes, Dr. Pereira’s recommended approach will not advance the Department’s objectives for effective incentive regulation. Compared with cost of service regulation, the Department in D.P.U. 94-158 concluded that “five broad classes of potential benefits are associated with incentive regulation: improved X-efficiency; improved allocative efficiency; improved dynamic efficiency; facilitation of new services; and reduced administrative costs.” (pp. 52-53). X efficiency refers to the ability to operate as cost effectively as possible, given the available technology. The Department refers to allocative efficiency as “the ability to provide service using the optimal combination of inputs, thereby minimizing total cost.” (p. 53). This is indeed one manifestation of allocative efficiency, but another is the ability to price utility services as efficiently as possible. Allocatively efficient prices are generally promoted via pricing flexibility e.g. prices can be adjusted to reflect changes in customers’ competitive opportunities. Dynamic efficiency refers to utilities’ longer-run investment behavior and reflects efficiencies related to research, reorganization and capital equipment choices. Because it is focused on the longer run, dynamic efficiency is also related to innovation and the provision of new services.

Compared with the Company’s proposal, Dr. Pereira’s recommended PBR alternative is less likely to promote each of these objectives. The points below do not constitute an exhaustive analysis, but consider the following:

Improved X efficiency Dr. Pereira's recommended ESM will frustrate Bay State's performance incentives and make it less likely that the Company will pursue initiatives that would otherwise improve efficiency and benefit customers. A simple example of how this can occur, which Dr. Pereira has not disputed, was presented in my rebuttal testimony. If Bay State is considering an initiative that requires upfront costs in Year 1 but raises ROE by 100 basis points thereafter, the Company will not undertake this project if Dr. Pereira's ESM is in effect, since doing so reduces its earnings *i.e.* the Company incurs the cost in Year 1 but does not retain any benefits from later years.

Improved Allocative Efficiency Dr. Pereira acknowledges (RR-DTE-120) that his proposal does not allow for pricing flexibility, which necessarily runs counter to the promotion of allocative efficiency. In addition, regulation that enshrines the principle that different X factors may be chosen for different cost components can actively distort a company's incentives to pursue cost efficiency in one area vis-à-vis another. Utilities evaluating how best to reduce costs under this type of regulation will naturally consider how reductions in different set of costs may impact their respective future X factors. For example, managers may decide simply to forgo cost reductions in an area where costs have already been cut because doing so makes other areas look "inefficient" by comparison, thereby leading to higher X factors for those cost components in the future. Managers should not be making decisions on how to improve efficiency by considering the regulatory implications of reducing costs in one area versus another. Doing so can only distort these decisions and make it less likely that they will choose "the optimal combination of inputs, thereby minimizing total cost." The Company's PBR proposal is neutral with regard to cost reduction incentives across different areas, whereas by choosing different X factors for different cost components Dr. Pereira's is not.

Improved Dynamic Efficiency and Facilitation of New Services Dynamic efficiency and the facilitation of new services can both be distorted by each of the problems noted above. For example, dynamic efficiency and new service development almost always require significant upfront costs, and the timing of benefits is uncertain and, particularly in early years, relatively small. Dr. Pereira's recommended approach makes it less likely that the Company will pursue such initiatives, since the relatively small, early returns on such investment would all be returned to customers and the Company would retain none. This distorts the net present value (NPV) calculation associated with an investment and makes it less likely it will be pursued.

Reduced Administrative Costs Reviews of utility PBR plans will be much more cumbersome and costly under Dr. Pereira's approach. There would be incentives for intervenors to identify relatively inefficient cost areas that require higher X factors, which may prompt vast new areas of discovery and dispute. In addition, because it is arbitrary, Dr. Pereira's rate formula is less likely to lead to "just and reasonable" rate adjustments during the

term of a PBR plan. This could lead utilities to exercise their statutory rights to file new rate cases during the term of a plan. While utilities in Massachusetts have these rights, all parties agree it is highly desirable to design PBR to prevent rate cases during the terms of PBR plans, which would naturally serve to increase administrative costs.

In sum, Dr. Pereira's proposes arbitrary adjustments of the Company's PBR plan to address a non-existent problem. His regulatory approach is unprecedented in Massachusetts and has been judged to create "diluted and distorted incentives" in Ontario, where it has been tried and discarded. While I believe Dr. Pereira's proposal is sincerely motivated by a desire to improve regulation in the State, it has been well thought-through. Compared with Bay State's alternative, Dr. Pereira's PBR proposal will unambiguously create worse performance incentives for the Company, not advance the Department's objectives for effective regulation, and ultimately create less benefit for Massachusetts ratepayers.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Lawrence R. Kaufmann

RR-DTE-163: Refer to Exh. BSG/Rebuttal-5, at 2-4. Please define "sunk costs" as used here. Discuss whether you would agree on categorizing the Company's capital costs as "sunk" costs. Discuss whether incentive mechanisms, as the one proposed by Bay State, should be applied to "sunk" costs.

Response: In economics, a sunk cost refers to the costs associated with an asset that has a secondary market value that is well below the value of the asset in its dedicated use. This concept can be demonstrated by considering the differences between two capital-intensive industries: gas distribution and airlines.

The main gas distribution assets are the distribution mains and services used to deliver gas from City Gate delivery points to end users. These assets are literally "sunk" into locations specifically designed to move natural gas from where it is received to where it is consumed within defined service territories. These assets also have very little secondary market value e.g. the value of gas distribution assets used to serve customers in Bay State's territory would have little value to a distributor like Southwest Gas, which is rapidly expanding its gas distribution system in its territory around Las Vegas.

Airlines are also capital-intensive industries, but the nature of their main assets – airplanes - is much different. If an airline finds the demand for its services has declined and it has too many aircraft, it can sell its unneeded airplanes to a rival airline. These assets are not "sunk" in a specific location but can be easily transported and used by new owners. Assuming there are a sufficiently large number of potential buyers, the market for used aircraft will be reasonably competitive, and the bids for such planes would push (secondary market) purchase prices close to the real underlying value of the assets.

It is appropriate to apply incentive mechanisms to all gas distributor costs, including "sunk" costs. This has been recognized by the Department in past PBR plans it approved for Boston Gas (in 1997 and 2003), Berkshire Gas, Blackstone Gas, and NYNEX-MA (which, like gas distributors, also has sunk costs). It is also the norm throughout the world for regulators to apply PBR plans to all utility costs, including sunk costs. This has been recognized, for example, by the Ontario Energy Board in the Final Report

it issued in the Natural Gas Forum investigating regulation in the Province (see the response to RR-DTE-162 for a relevant citation).

One reason incentive mechanisms should include sunk costs was discussed in my rebuttal testimony. The estimation of total factor productivity (TFP) trends necessarily involves all the costs of the enterprise, including sunk costs. The framework developed by the Department (and also used by many other regulators) to set the terms of index-based PBR plans utilizes evidence on TFP trends, and it is not possible to segregate TFP trend measures from a company's or industry's "sunk" costs.

In addition, there are compelling policy reasons why "sunk" costs should not be treated differently in a regulatory plan, as Dr. Pereira advocates. It has long been recognized that "sunk" utility investments can be subject to opportunistic behavior once they have been made. For example, a regulator may grant a company a relatively attractive rate of return in order to encourage investment to serve a new market or geographic area, but once the investments have been made the regulator can unilaterally choose to reduce that return in order to lower prices for customers. Gas distribution assets have little or no secondary market value, so utilities are essentially captive and cannot move those assets to alternative uses. There are legal and institutional protections against such opportunistic behavior in the US, in part because it is recognized that "recontracting" will deter future investment and is ultimately not in customers' long-term interests. However, such protections are less established in many parts of the world, and recontracting remains a risk in these jurisdictions. I am not suggesting that Dr. Pereira's proposal is tantamount to recontracting or similar behavior but, given these fundamental concerns, I believe the Department would set a very bad precedent if it treated a utility's "sunk" costs differently than its other costs simply because they were sunk.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Lawrence R. Kaufmann

RR-DTE-164: Refer to Exh.BSG/Rebuttal-5, at 4. The Company states that it is widely acknowledged that scale economies can be important source of TFP gains for energy utilities. However, in the Company's response to DTE 4-54 and RR-DTE-30, Bay State states that the Company's unit cost and the gas industry's unit cost are rising. Please explain whether rising unit costs within the Company and the gas industry would imply that diseconomies of scale, and not economies of scale, are taking place within the Company and the gas industry. If so, discuss how scale economies can be an important source of TFP gains for Bay State and the gas industry?

Response: It is possible for unit costs to be rising in an industry even as that industry realizes economies of scale. Rising unit cost is therefore not evidence that diseconomies of scale are being realized.

This can be seen by considering the indexing logic developed in my Direct Testimony. In Exhibit BSG/LRK-1 at 5, equation [2] shows that the trend in the unit cost of an industry is equal to the trend in input prices for that industry minus the industry's trend in total factor productivity (TFP) growth. Unit costs will therefore increase as long as input prices rise faster than TFP growth. All else equal, the realization of scale economies increases TFP growth and slows the growth in unit cost. However, the unit cost trend will remain positive (*i.e.* unit costs in the industry will continue to rise) as long as TFP grows more slowly than input prices.¹

There is evidence that economies of scale remain an important source of TFP growth for the gas distribution industry and Bay State. Assuming that input prices are constant, economies of scale will be realized whenever output increases and total cost rises by less than the increase in output. This, in turn, will be true whenever the cost elasticities for all outputs provided by the industry sum to less than 1. This must be true since a cost elasticity measures the responsiveness of cost to a change

¹ The relationships between scale economies, unit costs and input prices is not completely elucidated by the cost curves presented in economics textbooks, which show that unit (average) costs decline as output increases. Such a relationship is sufficient to show the existence of economies of scale, but it is not necessary. The unit and marginal cost curves presented in textbook graphs assume that input prices are constant. If this assumption is not true and input prices change over time, economies of scale can be realized and unit costs can increase at the same time.

in output and, by definition, is equal to the percentage change in cost divided by the percentage change in output. If the sum of elasticities for all outputs is less than one, then the change in costs is necessarily less than the change in outputs. Hence it is possible to infer whether or not scale economies exist by examining the estimated cost elasticities for outputs in a total cost model.

In Exhibit KEDNE/LRK-3 in D.T.E. 03-40, I presented a total cost econometric model for Boston Gas. A copy of this study is attached to this response (the model presented for Bay State in this proceeding applies only to O&M costs and hence is not appropriate, on its own, for evaluating whether economies of scale exist in the gas distribution industry;). The model in D.T.E. 03-40 had two gas distribution outputs: the number of customers served and total gas throughput. The Department has also used these two outputs when determining TFP trends for the gas distribution industry. The coefficients on the first order terms for customers and throughput in this model will give the cost elasticities for these outputs, respectively, for the sample mean firm.

These coefficients were 0.658 and 0.210, respectively, and both were statistically significant at the 1% level. These estimates indicate that, for a sample average distributor, a 1% increase in customers served raises gas distribution cost by 0.658% and a 1% increase in throughput raises gas distribution cost by 0.210%, all other variables held equal – *including input prices* (which, as noted, can affect the value of unit costs). Hence the total cost model in D.T.E. 03-40 shows that a 1% increase in both customers and throughput would raise gas distribution costs by 0.868%. Since the sum of these cost elasticities is less than one, this evidence indicates that the average firm in the US gas distribution industry continues to achieve economies of scale when output expands.

If economies of scale are realized for an average-sized distributor in the industry, they must also be realized by a distributor that is smaller than the average size. Table Two in Exhibit KEDNE/LRK-3 shows that the average US distributor served 742,764 customers and had 181,144 Mdth of throughput. Table Three in Exhibit BSG/LRK-2 shows that Bay State served 273,107 customers and had 63,497 Mdth in total throughput. Bay State is therefore well below average size in terms of customers and throughput for the US gas distribution industry. The evidence therefore shows that Bay State Gas can continue to achieve economies of scale, and scale economies can be a significant source of TFP growth for the Company.

Exhibit KEDNE/LRK-3

THE COST PERFORMANCE OF BOSTON GAS



THE COST PERFORMANCE OF BOSTON GAS

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1. INTRODUCTION AND SUMMARY

1.1 Introduction

Statistical benchmarking has in recent years become a widely used tool in the assessment of utility performance. Managers look to benchmarking studies for indications of how well their companies are doing. Benchmarking also plays a growing role in regulation. Such studies can, for example, be used to assess the reasonableness of costs and consumer dividends at the start of multiyear rate plans.

Appraisals of utility performance are facilitated by the extensive data that utilities report to regulators and industry associations. However, accurate appraisals are still challenging. There are important differences between companies in the character of services provided, the overall scale of operations, the prices of production inputs, and other business conditions that influence their cost. Data are unavailable for many companies and do not cover all relevant business conditions where they are available.

Pacific Economics Group LLC (“PEG”) personnel have been active for several years in statistical benchmarking research for utilities. We pioneered the use of scientific benchmarking in U.S. regulation and have testified on our work in several proceedings. Boston Gas (BoGas) is preparing a multiyear rate plan for its gas distribution services. It has commissioned PEG to measure its overall cost efficiency. We appraised its efficiency using econometric cost modeling.

This paper is a report on our benchmarking work for gas distribution. Following a brief summary of the work, Section 2 discusses the database used in the study and our calculation of distribution cost. Our econometric work is discussed in Section 3. Additional, more technical details of the research are presented in the Appendix.

1.2 Summary of Research

1.2.1 Definition of Cost

Our research addressed the efficiency of local gas distribution companies (LDCs) in managing the total cost of their distribution operations. Gas distribution services are defined to include the gas delivery, customer account and customer information services provided by LDCs. We do not address the cost of gas procurement services. The total cost of distribution services comprises the cost of plant ownership, operation, and maintenance.

1.2.2 The Sample

The econometric research was based on a sample of data for 43 distributors. The focus of benchmarking was the 1993-2000 period.

1.2.3 Econometric Research

The gas distribution cost performance of BoGas was appraised using an econometric cost model. Guided by economic theory, we developed a mathematical model in which the cost of gas distribution is a function of some quantifiable business conditions. The parameters of the model were estimated statistically using data on the historical costs of LDCs and the business conditions they faced. All key parameters were plausibly signed and highly significant.

We used the model to predict the average total cost of gas distribution services for BoGas given the business conditions it faced. The Company was found to face some challenging conditions in its efforts to contain gas distribution cost. For example, BoGas is not a combined gas and electric utility. The Company faces high prices for labor services and plant construction, and our results also show that there are special cost pressures from operating in the Northeast. It also has relatively more cast-iron main than any gas distributor in our sample.

BoGas's gas distribution cost was about 27% below the value predicted by the cost model, on average, from 1993 to 2000. This difference was statistically significant. We therefore conclude that BoGas is a significantly superior cost performer.

2. DATA ISSUES

2.1 Data

The primary source of the data used in our gas distribution cost research changed over the full sample period used in our benchmarking work. The *Uniform Statistical Report* (USR) was the primary source for the earliest years. Gas utilities are asked to file these reports annually with the American Gas Association (AGA). USR data for some variables are aggregated and published annually by the AGA in *Gas Facts*.

USRs are unavailable for many distributors. Many do not file complete USRs. Some LDCs that do file them do not release them to the public. The development of a satisfactory sample therefore required us to obtain basic cost and quantity data from alternative sources including, most notably, reports to state regulators. These reports often use as templates the Form 2 report that interstate gas transmission companies are required to file with the Federal Energy Regulatory Commission. Other sources of data were also used in the research. These included DRI/McGraw Hill; Whitman, Requardt & Associates; the Bureau of Economic Analysis (“BEA”) of the U.S. Department of Commerce; and the Bureau of Labor Statistics (“BLS”) of the U.S. Department of Labor.

Our econometric cost model is based on quality data for 43 gas distributors over the 1993 to 2000 period. The sample includes most of the nation’s larger distributors.

The sampled distributors grouped by region are listed in Table 1. It can be seen that the regional distribution of sampled LDCs is somewhat uneven. In particular, the northeast accounts for 40% of the sampled companies, but accounts for only 23% of U.S. gas end users. Texas accounts for only 2% of the sample, but for 7% of gas end users. The table also indicates that the sampled LDCs served about 52% of all gas end users in the United States.

Table 1

SAMPLE FOR THE GAS DISTRIBUTION ECONOMETRIC RESEARCH

Region	Company	Number of Customers (2000)	Region	Company	Number of Customers (2000)
Northeast	Boston Gas	542,792	North Central	Citizens Gas & Coke	265,450
	Brooklyn Union Gas	1,191,679		Consumers Power	1,594,484
	Central Hudson Gas & Electric	63,851		East Ohio Gas	1,234,854
	Commonwealth Gas	243,853		Illinois Power	399,361
	Connecticut Energy	164,012		Interstate Power	50,270
	Connecticut Natural Gas	155,641		Madison G & E	113,781
	Consolidated Edison	1,048,357		North Shore Gas	149,781
	New Jersey Natural Gas	414,620		Northern Illinois Gas	1,962,228
	Niagara Mohawk	548,075		Peoples Gas Light & Coke	840,560
	Orange & Rockland Utilities	118,718		Wisconsin Gas	540,676
	PECO	430,842		Wisconsin Power & Light	157,077
	People's Natural Gas	353,715	South Central	Alabama Gas	465,656
	PG Energy	155,992		Louisville Gas & Electric	297,717
	Providence Energy	172,965		Oklahoma Natural Gas	757,688
	Public Service Electric & Gas	1,621,128	Southwest	Enserch	1,415,296
	Rochester Gas & Electric	285,944		Mountain Fuel Supply	705,878
South Atlantic				Southwest Gas	1,289,046
	Atlanta Gas Light	1,530,000	Northwest	Cascade Natural Gas	193,160
	Baltimore Gas & Electric	595,239		Northwest Natural Gas	510,686
	Public Service Company of North Carolina	357,736		Washington Natural Gas	580,283
	Washington Gas Light	868,362	California	Pacific Gas & Electric	3,818,679
				San Diego Gas & Electric	756,053
				Southern California Gas	5,008,579
			Total for Sample		33,970,764
			Industry Total *		64,804,630
			Percentage of U.S. Total		52.4%

*Source For US Total: U.S. Energy Information Administration, *Natural Gas Annual 2000*

2.2 Definition of Cost

2.2.1 Applicable Total Cost

Cost figures play an important role in our benchmarking methods. The applicable total cost of gas distribution was calculated as gas operation and maintenance (“O&M”) expenses less gas production and procurement expenses plus total gas plant capital cost and a share of any common costs. The operations corresponding to this definition of cost include gas delivery, customer account, and customer information and other customer services of LDCs.

2.2.2 Cost Decomposition

Our benchmarking methods involve the decomposition of cost into three major input categories: capital services, labor services, and non-labor O&M inputs. The cost of gas delivery labor was defined as the sum of O&M salaries and wages and pensions and other employee benefits. The cost of other O&M inputs was defined to be O&M expenses net of these labor costs and of gas production and procurement expenses. This category includes the services of contract workers, insurance, real estate rents, equipment leases, and miscellaneous materials.

The study used a service price approach to measuring the cost of plant ownership that is based on the economic value of utility plant. Under this approach, the cost of capital is the product of a capital quantity index and the price of capital services. The cost of capital thus calculated includes depreciation, tax expenses, the opportunity cost of plant ownership, and capital gains. This method has a solid basis in economic theory and is well established in the scholarly literature. It controls in a precise and standardized way for differences between utilities in the age of their plants. Further details of our capital cost calculations are provided in Section A.1 of the Appendix.

3. ECONOMETRIC RESEARCH

3.1 An Overview of the Method

This section provides a substantially non-technical account of the econometric approach to benchmarking employed in this study. Additional, more technical details of the work are reported in the Appendix.

A mathematical model called a cost function was specified. Cost functions represent the relationship between the cost of a utility and quantifiable business conditions in its service territory. Business conditions are defined as aspects of a company's operating environment that influence its activities but cannot be controlled.

Economic theory was used to guide cost model development. We posited that the actual total cost (C_i) incurred by company, i , in service provision is the product of minimum achievable cost (C_i^*) and an efficiency factor ($efficiency_i$). This assumption can be expressed logarithmically as

$$\ln C_i = \ln C_i^* + \ln efficiency_i.^1 \quad [1]$$

The term \ln indicates the natural log of a variable.

According to theory, the minimum total cost of an enterprise is a function of the amount of work it performs and the prices it pays for capital and labor services and other inputs to its production process. Theory also provides some guidance regarding the nature of the relationship between these business conditions and cost. For example, cost is apt to be higher the higher are input prices and the greater is the amount of work performed.

Here is a simple example of a minimum total cost function for gas distribution that conforms to cost theory.

$$\ln C_{i,t}^* = a_0 + a_1 \cdot \ln N_{i,t} + a_2 \cdot \ln W_{i,t} + u_{i,t}. \quad [2]$$

¹ The logarithm of the product of two variables is the sum of their individual logarithms.

For each firm i in year t , the variable $N_{i,t}$ is the number of customers that the company serves. It quantifies one dimension of the work that it performs. The variable $W_{i,t}$ is the wage rate that the company pays. The wage rate and delivery volume are the measured business conditions in this cost function.

The term $u_{i,t}$ is the error term of the cost function. This term reflects errors in the specification of the model, including problems in the measurement of output and other business condition variables and the exclusion from the model of relevant business conditions. It is customary to assume a specific probability distribution for the error term that is determined by additional parameters, such as mean and variance.

Combining the results of Equations [1] and [2] we obtain the following model of cost:²

$$\ln C_{i,t} = \mathbf{a}_0 + \mathbf{a}_1 \ln N_{i,t} + \mathbf{a}_2 \ln W_{i,t} + e_{i,t}. \quad [3]$$

Here the *actual* (not minimum) total cost of a utility is a function of the two measured business conditions. The terms \mathbf{a}_0 , \mathbf{a}_1 , and \mathbf{a}_2 are model parameters. Their values are assumed to be constant across companies and over some period of time. The \mathbf{a}_0 parameter captures the efficiency factor for the average firm in the sample as well as the value of a_0 from Equation [3], the minimum total cost function. The values of \mathbf{a}_1 and \mathbf{a}_2 determine the effect of the two measured business conditions on cost. If the value of \mathbf{a}_2 is positive, for instance, an increase in wage rates will raise cost.

² Here is the full logic behind this result:

$$\begin{aligned} \ln C_{i,t} &= \ln C_{i,t}^* + \ln \text{efficiency} \\ &= (a_0 + a_1 \ln N_{i,t} + a_2 \ln W_{i,t} + u_{i,t}) + \ln \text{efficiency} \\ &= (a_0 + \ln \text{efficiency}^{\text{average}}) + a_1 \ln N_{i,t} + a_2 \ln W_{i,t} \\ &\quad + [u_{i,t} + (\ln \text{efficiency} - \ln \text{efficiency}^{\text{average}})] \\ &= \mathbf{a}_0 + \mathbf{a}_1 \ln N_{i,t} + \mathbf{a}_2 \ln W_{i,t} + e_{i,t} \end{aligned}$$

The term $e_{i,t}$ is the error term for equation [3]. We assume that it is a random variable. It includes the error term from the minimum total cost function. It also reflects the extent to which the Company's efficiency factor differs from the sample norm.

A branch of statistics called econometrics has developed procedures for estimating parameters of economic models. Cost model parameters can be estimated econometrically using historical data on the costs incurred by utilities and the business conditions that they faced. For example, a positive estimate for \mathbf{a}_2 would reflect the fact that the cost reported by sampled companies was typically higher when higher wages were paid to employees.

Numerous statistical methods have been established in the econometrics literature for estimating parameters of economic models. In choosing among these, we have been guided by the desire to obtain the best possible model for cost benchmarking. Econometric methods are also useful in selecting business conditions for the model. Tests are available for the hypothesis that the parameter for a business condition variable equals zero. Variables were excluded from the model when such hypotheses could not be rejected.

A cost function fitted with econometric parameter estimates may be called an econometric cost benchmark model. We can use such a model to predict a company's cost given values for the variables that represent the business conditions that the company faced. Returning to our simple example, we might predict the (logged) cost of BoGas in period t as follows:³

$$\ln \hat{C}_{BoGas,t} = \hat{\mathbf{a}}_0 + \hat{\mathbf{a}}_1 \cdot \ln N_{BoGas,t} + \hat{\mathbf{a}}_2 \cdot \ln W_{BoGas,t} \quad [4]$$

Here $\hat{C}_{BoGas,t}$ denotes the predicted cost of the Company in period t , $N_{BoGas,t}$ is the number of customers it served, and $W_{BoGas,t}$ is the wage rate that it paid. The $\hat{\mathbf{a}}_0$, $\hat{\mathbf{a}}_1$, and $\hat{\mathbf{a}}_2$ terms are parameter estimates. Notice that in this model the cost benchmark reflects, through the estimate of parameter \mathbf{a}_0 , the *average* efficiency of the sampled utilities.

³ Since this is a predicted equation using estimated parameters there is no error term.

Consider, now, that if the parameter estimates are unbiased and the expected value of $u_{i,t}$ is zero, the expected value of the percentage difference between the company's actual cost and that predicted by the model is the percentage difference between the efficiency factor of BoGas and that of the sample mean firm.

$$\ln\left(\frac{C_{BoGas,t}}{\hat{C}_{BoGas,t}}\right) = \ln\left(\frac{\text{efficiency}_{BoGas}}{\text{efficiency}^{average}}\right). \quad [5]$$

This percentage difference is a measure of the company's cost performance.

A number like that generated by the cost benchmark model in [5] constitutes our best estimate of the company's cost given the business conditions that it faces. This is an example of a point prediction. An important characteristic of the econometric approach to benchmarking is that the statistical results provide information about the *precision* of such point predictions. According to econometric theory, precision is greater the lower is the variance of the model's prediction error. The variance of the prediction error can be estimated using a well-established formula. The formula shows that the precision of cost model predictions is greater to the extent that:

- 1) The model is more successful in explaining the variation in cost in the sample
- 2) The size of the sample is larger
- 3) The number of business condition variables included in the model is smaller
- 4) The business conditions of sample companies are more varied
- 5) The business conditions of the subject company are closer to those of the typical firm in the sample

3.2 Business Condition Variables

3.2.1 Output Quantity Variables

As noted above, economic theory suggests that quantities of work performed by utilities should be included in our cost model as business condition variables. There are two output quantity variables in our model: the number of retail customers and total throughput. We expect cost to be higher for higher values of each of these workload measures.

3.2.2 Input Prices

Cost theory also suggests that the prices paid for production inputs are relevant business condition variables. In this model, we have specified input price variables for capital, labor, and other O&M inputs.⁴ We expect cost to be higher as the values of these price variables increase.

The labor price variable used in this study was constructed by PEG using data from the BLS. National Compensation Survey (“NCS”) data for 1998 were used to construct average wage rates that correspond to each LDC’s service territory. The wage levels were calculated as a weighted average of the NCS pay level for each job category using weights that correspond to the Electric, Gas, and Sanitary (EGS) sector for the U.S. as a whole. Values for other years were calculated by adjusting the 1998 level for changes in the Employment Cost Index for the EGS sector over the 1993-2000 period.

Prices for other O&M inputs are assumed to be the same in a given year for all companies. They are escalated by growth in the GDP-PI. Our general approach to the computation of a price index for capital services is described in Section 2.2. Further details of this calculation are found in the Appendix.

3.3 Other Business Conditions

Five additional business condition variables are included in the cost model. One is the percentage of distribution main not made of cast iron, calculated from American Gas Association data. Cast iron pipes were common in gas system construction in the early days of the industry. It is more heavily used in the older distribution systems, which tend to be in the eastern U.S. Greater use of cast iron typically involves both higher maintenance and replacement costs. A higher value for this variable means that a company owns fewer cast iron mains and has lower expected costs. Hence, we would expect the sign for this coefficient to be negative.

⁴ The price index for other O&M inputs doesn’t appear in the estimated parameter tables due to the imposition of the linear homogeneity restriction predicted by economic theory.

A second additional business condition variable is the number of power distribution customers served by the utility. This variable is intended to capture the extent to which the company has diversified into power distribution. Such diversification will typically lower cost due to the ability to share inputs (e.g., personnel, computer systems, meter readers) between the two services. Higher values for this variable indicate greater levels of diversification. We would therefore expect the value of this coefficient to be negative.

A third business condition was a dummy variable for distributors that operate in territories that are subject to frequent earthquakes. Systems in these territories may have to be designed differently to withstand earthquakes. Because these design differences are likely to entail additional costs, the coefficient on this variable is expected to be positive.

The model also included a dummy variable for distributors operating in the northeastern U.S. Previous econometric studies for BoGas have found that Northeast operations are associated with higher costs, even after controlling for factors like higher input prices. This coefficient is therefore expected to be positive. The northeast dummy takes a value of 1 for every distributor headquartered in the New England, New York, Pennsylvania or New Jersey and zero for all other companies.

Finally, the model included a PBR dummy variable for BoGas. This variable took a value of one for BoGas during the years when it operated under PBR (1997-2000) and zero for other years and for every other company. Because PBR is expected to lower costs by strengthening performance incentives, this coefficient was expected to be negative.

The model also contains a trend variable. It permits predicted cost to shift over time for reasons other than changes in the specified business conditions. A trend variable captures the net effect on cost of diverse conditions, including technological change. It may also reflect the failure of the included business condition variables to properly measure the trends in relevant cost drivers. The model may, for instance, exclude an important cost driver or do a poor job of measuring such a driver. The trend variable might then capture the impact on cost of the trend in the driver.

3.4 Business Conditions of BoGas

Table 2 compares the average values over the 1993-2000 period of cost model business conditions for BoGas to the sample mean values of these variables. It can be seen that the average total cost of BoGas was just over 80% of the sample mean. Meanwhile, the number of customers served by BoGas was about 70% of the mean and its throughput was just below 80% of the mean.

Turning next to input prices, the table shows that BoGas had labor prices 13% above the sample mean. Its capital service price was about 9% above the mean.

Prices for other inputs were assumed to be the same across the sampled companies. This simplifying assumption may well distort results for BoGas. After all, it is quite possible that a region with high labor and construction costs also has higher average prices for other production inputs, especially those that are intensive in the use of local labor.

Regarding the other business conditions, note first that BoGas's percentage of gas distribution main that is not made of cast iron was well below the sample mean. In fact, BoGas had the most cast-iron intensive system in our sample, representing about 44% of main. This was more than twice the average share of cast iron main for the sample (17%) and reflects the age of the BoGas distribution network.

Note, finally, that BoGas has no power distribution customers. This has limited its opportunity to realize potential scope economies by sharing inputs with other utility services.

3.5 Econometric Results

3.5.1 Estimation Results

Estimation results for the cost model are reported in Table 3. The parameter values for the five additional business conditions and for the first order terms of the translogged variables are elasticities of the cost of the sample mean firm with respect to the basic variable. The first order terms are the terms that do not involve squared values of business condition variables or interactions between different variables. The table shades the results for these terms for reader convenience.

Table 2

**Average Values of Variables in the Benchmarking Study:
Gas Delivery**

Variable	Units	U.S. Sample Average	Boston Gas	Boston Gas/ Sample Mean
Gas Delivery Cost	1,000 U.S. Dollars	380,027	311,651	0.82
Number of Customers	Customers	742,764	522,947	0.70
Total Throughput	mdkth	181,144	141,966	0.78
Price of Capital Services	Index Number	16.25	17.67	1.09
Price of Labor Services	Dollars per Employee	35,132	39,818	1.13
Price of Materials	Index Number	1.13	1.13	1.00
Number of Electric Customers	Customers	432,511	0	0.00
Percent of Main not Cast Iron	Percent	83.02%	56.14%	0.68
Earthquake Dummy	Binary	0.186	0.000	0.00
NE Dummy	Binary	0.372	1.000	2.69

Table 3

**Translog Cost Function Regression Results:
Gas Delivery**

VARIABLE KEY

L= Labor Price
K= Capital Price
N= Number of Customers
YV= Total Throughput
EC= Number of Electric Customers
NI= % of Main that is Non-cast Iron
EQ= Earthquake Dummy Variable
NE= Northeast Dummy
BG= Boston Gas PBR Dummy

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-STATISTIC	EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-STATISTIC
L	0.202	60.15	EC	-0.010	-7.50
LL	-0.101	-2.19	NI	-0.210	-4.23
LK	0.010	0.41	EQ	0.016	3.75
LN	0.014	1.58	NE	0.059	9.11
LYV	-0.023	-2.60	BG	-0.003	-3.92
K	0.648	141.21	Constant	8.015	356.38
KK	0.090	3.38	Trend	-0.005	-1.46
KN	-0.028	-2.61	System Rbar-Squared	0.975	
KYV	0.038	3.54			
N	0.658	20.82			
NN	-0.439	-6.41			
NYV	0.452	6.44			
YV	0.210	6.32			
YVYV	-0.512	-6.83			

* Data for all variables were logged and mean-scaled prior to model estimation

The tables also report the values for the corresponding asymptotic t ratios. These were also generated by the estimation program and were used to assess the range of possible values for parameters that are consistent with the data. A parameter estimate is deemed statistically significant if the hypothesis that the true parameter value equals zero is rejected. This statistical test requires the selection of a critical value for the asymptotic t ratio. In this study, we employed critical values that are appropriate for a 90% confidence level given a large sample. The critical value was 1.645.

Examining the results in Table 3, it can be seen that the cost function parameter estimates were plausible as to sign and magnitude. With regard to the first order terms of the translogged variables, cost was found to be higher the higher were input prices and output quantities. At the sample mean, a 1% increase in the number of customers raised cost by 0.66%. A 1% hike in throughput raised cost by about 0.21%. The sum of those elasticities was about 0.87%. The number of customers served was clearly the dominant output-related cost driver.

The sum of the output elasticities is a common indicator of economies of scale. A sum less than one is an indicator that scale economies can be realized from balanced output growth for a firm of sample mean size. Since TFP growth depends in part on scale economies, this also means that it can differ from region to region of the U.S. due in part to differences in the pace of output growth.

Turning to results for the input prices, it can be seen that the elasticity of cost with respect to the price of capital services was 0.65%. This was more than three times the estimated elasticity of the price of labor. This reflects the capital intensiveness of the gas distribution business.

The coefficients on the additional business condition variables were also sensible and, with the exception of the trend variable, were statistically significant.

- Cost was lower as the percentage of distribution mains not made with cast iron increased.

- Cost was lower as the number of electric customers served by a distributor increased.
- Cost was higher for distributors operating in the Northeast.
- Cost was higher for distributors operating in territories with frequent earthquakes.
- The coefficient on the PBR dummy was -0.3% ; this implies that, after controlling for each of the other business conditions in the model, BoGas's costs declined by 0.3% during the years when PBR was in effect.
- The estimate of the trend variable parameter was -0.005 and was not significant.

3.5.2 Econometric Benchmarking Results

Table 4 presents the results of our appraisals of BoGas's cost using the econometric model. The Company's average cost during the sample period was found to be about 27% below its predicted value. The hypothesis that the company was an average (or inferior) cost performer was rejected at the 99% confidence level. BoGas was therefore a significantly superior cost performer.

Table 4

**Actual and Predicted Comprehensive
Cost For Gas Distribution: 1993-2000
Boston Gas (U.S. \$)**

Actual Cost \$1,000	Predicted Cost \$1,000	Difference (%)	t-statistic
311,651	427,898	-27.2%	-5.59

APPENDIX:

FURTHER DETAILS OF THE BENCHMARKING RESEARCH

This section provides additional and more technical details of our benchmarking work. We first consider our method for computing capital cost. There follow treatments of our indexing and econometric work.

A.1 Capital Cost

A service price approach was chosen to measure the cost of plant ownership. This approach has a solid basis in economic theory and is widely used in scholarly empirical work.⁵ In the application of the general methodology used in this study, capital cost in a given year t , CK_t , is the product of a capital service price index, WKS_t and a capital quantity index, XK_{t-1} .

$$CK_t = WKS_t \cdot XK_{t-1}. \quad [6]$$

The service price index may be thought of as the annual cost (including the opportunity cost) of owning a unit of plant.

Each capital quantity index is constructed using inflation-adjusted data on the value of utility plant. Each service price index measures the trend in the hypothetical price of capital services from the assets in a competitive rental market. The price and quantity indexes require a consistent mathematical characterization of the process of plant deterioration.

In constructing the indexes we took 1983 as the benchmark or starting year for our gas distribution cost research. The values for these indexes in the benchmark year are based on the net value of plant as reported on the USR. We estimated the benchmark year (inflation adjusted) value of net plant by dividing the aggregate appropriate base year value by a “triangularized” weighted average of the values of an index of utility asset prices for a period ending in the

⁵ See Hall and Jorgensen (1967) for a seminal discussion of the service price method of capital cost measurement.

benchmark year equal to the lifetime of plant. A triangularized weighting gives greater weight to more recent values of this index, reflecting the notion that more recent plant additions have a disproportionate impact on the book value of plant.⁶ The value of the asset-price index, WKA_t , is the applicable regional Handy-Whitman index of utility construction costs for the relevant asset category.⁷

The following formula was used to compute subsequent values of the capital quantity index:

$$XK_t = (1 - d) \cdot XK_{t-1} + \frac{VI_t}{WKA_t}. \quad [7]$$

Here, the parameter, d , is the economic depreciation rate, VI_t is the value of gross additions to the utility plant and WKA_t is the index of utility plant asset prices.

The economic depreciation rate, d , was calculated as a weighted average of the depreciation rates for the structures and equipment used in the applicable industry. The depreciation rate for each structure and equipment category was obtained from the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce. The weights were based on net stock value data drawn from the same source.

The formula for the capital service price index, WKS_t , is:

$$WKS_t = (CK_t^{taxes} / XK_{t-1}) + r_t \cdot WKA_{t-1} + d \cdot WKA_t - (WKA_t - WKA_{t-1}). \quad [8]$$

The four terms in this formula correspond to the four components of capital cost. These are: taxes, the opportunity cost of capital, depreciation, and capital gains.⁸ Here, CK_t^{taxes} is the sum of total tax payments and franchise fees attributed to the LDC.⁹ The term, r_t , is the user cost of capital for the U.S. economy.¹⁰ PEG calculates this using data in the National Income and Product Accounts

⁶ For example, in a triangularized weighting of 20 years of index values, the oldest index value has a weight of 1/210, the next oldest index has a value of 2/210, and so on. 210 is the sum of the numbers from 1 to 20. A discussion of triangularized weighting of asset price indexes is found in Stevenson (1980).

⁷ These data are reported in the *Handy-Whitman Index of Public Utility Construction Costs*, a publication of Whitman, Requardt and Associates.

⁸ The opportunity cost of capital is sometimes called the cost of funds.

⁹ Franchise fees are a part of O&M expenses in our TFP trend indexes.

¹⁰ The U.S. economy user cost of capital is not directly observable, but it can be measured by applying two economic relationships. The first economic pertains to the National Income and Products Accounts (NIPA)

(NIPA). The accounts are published by the Department of Commerce in its Survey of Current Business series. Capital gains are smoothed using a three-year moving average.

A.2 Econometric Research

A.2.1 Form of the Cost Model

The functional form selected for this study was the translog.¹¹ This very flexible function is the most frequently used in econometric cost research, and by some account the most reliable of several available alternatives.¹² The general form of the translog cost function is:

definitions of Gross Domestic Product (GDP) and the cost of inputs used by the U.S. economy. In the NIPA, the total cost of the U.S. economy inputs is equal to GDP. At the economy-wide level there are two inputs: labor and capital. Therefore the total cost of capital is equal to GDP less Labor Compensation (CL), or:

$$CK = GDP - CL \quad (1)$$

where CK represents the total cost of capital. The second relationship is between the total cost of capital and the components of the capital price equation. The total cost of capital is equal to the product of the quantity of capital input and the price of capital input, or:

$$CK = P_k \cdot K \quad (2)$$

where P_k represents the price and K the quantity of capital input. The price of capital can be decomposed into the price index for new plant and equipment (J), the opportunity cost of capital (r), the rate of depreciation (d), the inflation rate for new plant and equipment (l), and the rate of taxation on capital (t):

$$P_k = J \cdot (r + d - l + t) \quad (3)$$

Combining (2) and (3) one obtains the relationship:

$$\begin{aligned} CK &= J \cdot (r + d - l + t) \cdot K \\ &= r \cdot J \cdot K + d \cdot J \cdot K - l \cdot J \cdot K + t \cdot J \cdot K \\ &= r \cdot VK + D - l \cdot VK + T \end{aligned} \quad (4)$$

where D represents the total cost of depreciation, T total indirect business taxes and corporate profits taxes, and VK the current cost of plant and equipment net stock. Combining (1) and (4), one can derive the following equation for the opportunity cost of capital:

$$r = \frac{(GDP - CL - D - T + l \cdot VK)}{(VK)} \quad (5)$$

GDP, labor compensation, depreciation, and taxes are reported annually in the NIPA. The current cost of plant and equipment net stock and the inflation rate for plant and equipment are not reported in the NIPA, but are reported in Fixed Reproducible Tangible Wealth in the United States.

¹¹ The transcendental logarithmic (or translog) cost function can be derived mathematically as a second order Taylor series expansion of the logarithmic value of an arbitrary cost function around a vector of input prices and output quantities.

¹² See Guilkey (1983), et. al.

$$\begin{aligned} \ln C = & \mathbf{a}_0 + \sum_h \mathbf{a}_h \ln Y_h + \sum_j \mathbf{a}_j \ln W_j \\ & + \frac{1}{2} \left(\sum_h \sum_k \mathbf{g}_{h,k} \ln Y_h \ln Y_k + \sum_j \sum_n \mathbf{g}_{j,n} \ln W_j \ln W_n \right) \\ & + \sum_h \sum_j \mathbf{g}_{i,j} \ln Y_i \ln W_j \end{aligned} \quad [9]$$

where Y_h denotes one of K variables that quantify output and the W_j denotes one of N input prices.

One aspect of the flexibility of this function is its ability to allow the elasticity of cost with respect to each business condition variable to vary with the value of that variable. The elasticity of cost with respect to an output quantity, for instance, may be greater at smaller values of the variable than at larger variables. This type of relationship between cost and quantity is often found in cost research.

Business conditions other than input prices and output quantities can contribute to differences in the costs of LDCs. To help control for other business conditions the logged values of some additional explanatory variables were added to the model in Equation [9] above.

The econometric model of cost we wish to estimate can then be written as:

$$\begin{aligned} \ln C = & \mathbf{a}_0 + \sum_h \mathbf{a}_h \ln Y_h + \sum_j \mathbf{a}_j \ln W_j \\ & + \frac{1}{2} \left[\sum_h \sum_k \mathbf{g}_{hk} \ln Y_h \ln Y_k + \sum_j \sum_n \mathbf{g}_{jn} \ln W_j \ln W_n \right] \\ & + \sum_h \sum_j \mathbf{g}_{ij} \ln Y_h \ln W_j + \sum_h \mathbf{a}_h \ln Z_h + \mathbf{a}_t T + \mathbf{e} \end{aligned} \quad [10]$$

Here the Z_h 's denote the additional business conditions, T is a trend variable, and \mathbf{e} denotes the error term of the regression.

Cost theory requires a well-behaved cost function to be homogeneous in input prices. This implies the following three sets of restrictions:

$$\sum_{h=1}^N \frac{\partial \ln C}{\partial \ln W_h} = 1 \quad [11]$$

$$\sum_{h=1}^N \frac{\partial^2 \ln C}{\partial \ln W_h \partial \ln W_j} = 0 \quad \forall j = 1, \dots, N \quad [12]$$

$$\sum_h^N \frac{\partial^2 \ln C}{\partial \ln Y_h \partial \ln Y_j} = 0 \quad \forall j = 1, \dots, K \quad [13]$$

Imposing the above $(1 + N + K)$ restrictions implied by Equations [21-23] allow us to reduce the number of parameters that need be estimated by the same amount.

Estimation of the parameters in Equation [20] is now possible but this approach does not utilize all information available in helping to explain the factors that determine cost. More efficient estimates can be obtained by augmenting the cost equation with the set of cost share equations implied by Shepard's Lemma. The general form of a cost share equation for a representative input price category, j , can be written as:

$$S_j = a_j + \sum_i g_{h,j} \ln Y_h + \sum_n g_{jn} \ln W_n \quad [14]$$

We note that the parameters in this equation also appear in the cost model. Since the share equations for each input price are derived from the first derivative of the translog cost function with respect to that input price, this should come as no surprise. Furthermore, because of these cross-equation restrictions, the total number of coefficients in this system of equations will be no larger than the number of coefficients required to be estimated in the cost equation itself.

A.2.2 Estimation Procedure

We estimated this system of equations using a procedure first proposed by Zellner (1962).¹³ It is well known that if there exists contemporaneous correlation between the errors in the system of regressions, more efficient estimates can be obtained by using a Feasible Generalized Least Squares (FGLS) approach. To achieve even a better estimator, PEG iterates this procedure to convergence.¹⁴ Since we estimate these unknown disturbance matrices consistently, the estimators we eventually compute are equivalent to Maximum Likelihood Estimation (MLE).¹⁵ Our estimates would thus possess all the highly desirable properties of MLE's.

¹³ See Zellner, A. (1962).

¹⁴ That is, we iterate the procedure until the determinant of the difference between any two consecutive estimated disturbance matrices are approximately zero.

¹⁵ See Dhrymes (1971), Oberhofer and Kmenta (1974), Magnus (1978).

Before proceeding with estimation, there is one complication that needs to be addressed. Since the cost share equations by definition must sum to one at every observation, one cost share equation is redundant and must be dropped.¹⁶ This does not pose a problem since another property of the MLE procedure is that it is invariant to any such reparameterization. Hence, the choice of which equation to drop will not affect the resulting estimates.

A.2.3 Predicting Cost

We now turn our attention to the topic of predicting the level of a utility's cost given its specific values for the explanatory variables. Fitting our cost model with the econometric parameter estimates, we obtain an econometric model of distributor cost. This can then be used to predict the historical cost of an LDC given its values for the specified business controls. It is well known that the ability of the model to make accurate predictions depends, in part, on the characteristics of the data reported for the utility as compared to the sample averages. The closer the firm's data are to the sample averages, the more accurate is the model's prediction. Alternatively, the more the characteristics of the utility's data lie outside those of the sample means, the less reliable is its predicted cost.

It should be noted that the model specification was determined using the data for all sampled companies, including BoGas. However, to compute the model parameters and standard errors for the prediction required that the utility of interest be dropped from the sample when we estimated the coefficients in the predicting equation.¹⁷ The standard error based on this "out-of-sample" prediction was then used to construct the hypothesis tests for cost efficiency.

¹⁶ This equation can be estimated indirectly from the estimates of the parameters left remaining in the model.

¹⁷ This implies that the estimates used in constructing the predicting equation will vary slightly from those reported in the study.

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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Lawrence R. Kaufmann

RR-DTE-165: Refer to Exh. BSG/Rebuttal-5, at 11. Please discuss the additional benefits of having earnings caps and floors added to the ESM as proposed by the Company.

Response: Earnings caps and floors can have the benefit of mitigating the risk of earnings outcomes that are viewed as undesirable. This can promote consensus among different groups that the PBR plan is operating as expected which, in turn, can enhance the plan's stability. It may be desirable to include earnings caps and floors for Bay State since there is uncertainty regarding the financial impacts of issues that are new to this proceeding and which have generated concern among some parties. For example, the earnings cap could "protect" customers against especially high earnings that some allege will result from the recent outsourcing contract with IBM. The earnings floor protects Company shareholders against especially severe drags on earnings due to accelerated replacement of steel infrastructure facilities. An earnings floor becomes more appropriate if the Department rejects the Company's SIR proposal.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE D.T.E.
D.T.E. 05-27

Date: August 18, 2005

Responsible: Lawrence R. Kaufmann

RR-DTE-170: Please respond to Dr. Pereira's recommendation that there be two separate X factors, one that applies to O&M costs and one that applies to capital costs.

Response: Such a recommendation is ill-founded, arbitrary, inconsistent with Department precedent, and will not promote the Department's objectives for effective incentive regulation. Please see the responses to RR-DTE-162 and RR-DTE-163 for further details and analyses.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE USWA, AFL-CIO\CLC

D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-USWA 10: What was the cost of the online call-aid, and to upgrade the interactive voice-response system and the front-end call-switch? Also, include the cost of any other purchases or leases of technology at the Call Center for the purpose of improving service quality.

Response: Attachment RR-USWA-10 is a schedule that provides the original cost and net book value of all assets associated with the Springfield Call Center.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE USWA, AFL-CIO\CLC

D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-USWA-16: If available, provide the 2000 Springfield Call Center study that evaluated the number of FTEs required to achieve an acceptable level of customer service.

Response: The Company is unable to locate a copy of the study conducted in 2000 that evaluated the number of FTEs required to achieve an acceptable level of customer service.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE USWA, AFL-CIO\CLC

D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-USWA-17: If available, provide the number of customer callbacks, monthly or cumulatively, using the new Virtual Hold system in the Springfield Call Center, since the system was introduced in August 2004.

Response: Attachment RR-USWA-17 contains reports detailing Virtual Hold activity for the Springfield Call Center since the system was introduced in August 2004. The telephone rate has been redacted, as it is competitively sensitive information and is not relevant to the question asked here.

Dates: 1-Oct-04 thru 31-Oct-04
Generated on: 8-Aug-05 4:52:47 PM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
62	15	24.2%	47	75.8%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	15	14	93.3%	20.0%	0.0%	73.3%	0.0%	6.7%
VirtualQueue	15	14	93.3%	20.0%	0.0%	73.3%	0.0%	6.7%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	14	11	2	1	0
VirtualQueue	14	11	2	1	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	14	11	2	1	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	14
Total Saved Minutes	104
Average Saved Minutes / Return Call	7

Average Dollar Savings / Return Call	\$0.30
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
11	45.5%	4	0	1	3	00:00:10	00:00:08

Return Call - Hold Time Summary

Dates: 1-Oct-04 thru 31-Oct-04
Generated on: 8-Aug-05 4:52:47 PM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
3	1	33.3%	2	66.7%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	1	1	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
VirtualQueue	1	1	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	1	1	0	0	0
VirtualQueue	1	1	0	0	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	1	1	0	0	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 1

Total Saved Minutes 0

Average Saved Minutes / Return Call 0

Average Dollar Savings / Return Call \$0.00

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
1	0.0%	0	0	0	1	00:00:30	00:00:30

Return Call - Hold Time Summary

Dates: 1-Oct-04 thru 31-Oct-04
Generated on: 8-Aug-05 4:52:47 PM

Version 3.0

Executive Summary Results for Queue MAService

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
657	238	36.2%	419	63.8%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	238	225	94.5%	94.1%	0.4%	0.0%	0.0%	5.5%
VirtualQueue	238	225	94.5%	94.1%	0.4%	0.0%	0.0%	5.5%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	225	203	15	5	2
VirtualQueue	225	203	15	5	2
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	225	203	15	5	2
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	225
Total Saved Minutes	756

Average Saved Minutes / Return Call	3
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Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
203	71.9%	92	53	1

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
224	00:00:15	00:00:26

Dates: 1-Nov-04 thru 30-Nov-04
Generated on: 8-Aug-05 4:55:53 PM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
352	140	39.8%	212	60.2%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	140	135	96.4%	96.4%	0.0%	0.0%	0.0%	3.6%
VirtualQueue	140	135	96.4%	96.4%	0.0%	0.0%	0.0%	3.6%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	135	128	6	0	1
VirtualQueue	135	128	6	0	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal - A	135	128	6	0	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal - B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	135
Total Saved Minutes	226
Average Saved Minutes / Return Call	2

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
128	96.1%	49	73	1

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
135	00:00:09	00:00:12

Dates: 1-Nov-04 thru 30-Nov-04

Generated on: 8-Aug-05 4:55:53 PM

Executive Summary Results for Queue MACredit

Version 3.0

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
212	74	34.9%	138	65.1%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	74	70	94.6%	91.9%	2.7%	0.0%	0.0%	5.4%
VirtualQueue	74	70	94.6%	91.9%	2.7%	0.0%	0.0%	5.4%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	70	62	6	1	1
VirtualQueue	70	62	6	1	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	70	62	6	1	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	70
Total Saved Minutes	132
Average Saved Minutes / Return Call	2

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
62	98.4%	25	35	1

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
68	00:00:12	00:00:14

Dates: 1-Nov-04 thru 30-Nov-04
Generated on: 8-Aug-05 4:55:53 PM

Version 3.0

Executive Summary Results for Queue MAService

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
1,110	392	35.3%	718	64.7%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	392	375	95.7%	94.6%	1.0%	0.0%	0.0%	4.3%
VirtualQueue	392	375	95.7%	94.6%	1.0%	0.0%	0.0%	4.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	375	342	25	5	3
VirtualQueue	375	342	25	5	3
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	375	342	25	5	3
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	375
Total Saved Minutes	914
Average Saved Minutes / Return Call	2

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
342	89.5%	151	151	4

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
371	00:00:10	00:00:17

Dates: 1-Dec-04 thru 31-Dec-04
Generated on: 8-Aug-05 4:59:25 PM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
72	24	33.3%	48	66.7%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	24	23	95.8%	91.7%	0.0%	4.2%	0.0%	4.2%
VirtualQueue	24	23	95.8%	91.7%	0.0%	4.2%	0.0%	4.2%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	23	23	0	0	0
VirtualQueue	23	23	0	0	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	23	23	0	0	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	23
Total Saved Minutes	34
Average Saved Minutes / Return Call	1
Average Dollar Savings / Return Call	\$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
23	91.3%	14	7	0

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
22	00:00:08	00:00:12

Dates: 1-Dec-04 thru 31-Dec-04
Generated on: 8-Aug-05 4:59:25 PM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
34	14	41.2%	20	58.8%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	14	13	92.9%	92.9%	0.0%	0.0%	0.0%	7.1%
VirtualQueue	14	13	92.9%	92.9%	0.0%	0.0%	0.0%	7.1%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	13	12	1	0	0
VirtualQueue	13	12	1	0	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal - A	13	12	1	0	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal - B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 13

Total Saved Minutes 39

Average Saved Minutes / Return Call 3

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
12	91.7%	5	6	0

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
13	00:00:11	00:00:16

Dates: 1-Dec-04 thru 31-Dec-04
Generated on: 8-Aug-05 4:59:25 PM

Executive Summary Results for Queue MAService

Version 3.0

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
290	92	31.7%	198	68.3%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	92	89	96.7%	96.7%	0.0%	0.0%	0.0%	3.3%
VirtualQueue	92	89	96.7%	96.7%	0.0%	0.0%	0.0%	3.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	89	80	6	2	1
VirtualQueue	89	80	6	2	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	89	80	6	2	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 89

Total Saved Minutes 220

Average Saved Minutes / Return Call 2

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
80	81.3%	35	27	3	89	00:00:11	00:00:20

Return Call - Hold Time Summary

Dates: 1-Jan-05 thru 31-Jan-05
Generated on: 8-Aug-05 4:21:54 PM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
862	276	32.0%	586	68.0%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	276	267	96.7%	95.7%	0.4%	0.7%	0.0%	3.3%
VirtualQueue	276	267	96.7%	95.7%	0.4%	0.7%	0.0%	3.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	267	250	12	5	0
VirtualQueue	267	250	12	5	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal - A	267	250	12	5	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal - B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 267

Total Saved Minutes 426

Average Saved Minutes / Return Call 2

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
250	94.8%	134	103	0	264	00:00:08	00:00:11

Return Call - Hold Time Summary

Dates: 1-Jan-05 thru 31-Jan-05
Generated on: 8-Aug-05 4:21:54 PM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
777	256	32.9%	521	67.1%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	256	246	96.1%	95.3%	0.8%	0.0%	0.0%	3.9%
VirtualQueue	253	243	96.0%	95.3%	0.8%	0.0%	0.0%	4.0%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	3	3	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	246	227	15	4	0
VirtualQueue	243	226	13	4	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	243	226	13	4	0
Appointment	3	1	2	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	3	1	2	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	243
Total Saved Minutes	396
Average Saved Minutes / Return Call	2
Average Dollar Savings / Return Call	\$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
226	94.2%	121	92	0	244	00:00:10	00:00:14

Return Call - Hold Time Summary

Dates: 1-Jan-05 thru 31-Jan-05
Generated on: 8-Aug-05 4:21:54 PM

Executive Summary Results for Queue MAService

Version 3.0

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
1,088	384	35.3%	704	64.7%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	384	375	97.7%	96.9%	0.5%	0.3%	0.0%	2.3%
VirtualQueue	383	374	97.7%	96.9%	0.5%	0.3%	0.0%	2.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	1	1	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	375	343	25	7	0
VirtualQueue	374	342	25	7	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	374	342	25	7	0
Appointment	1	1	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	1	1	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	374
Total Saved Minutes	554
Average Saved Minutes / Return Call	1

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
342	95.0%	170	155	0

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
372	00:00:07	00:00:11

Dates: 1-Feb-05 thru 28-Feb-05
Generated on: 9-Aug-05 8:31:44 AM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
762	250	32.8%	512	67.2%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	250	242	96.8%	92.8%	3.6%	0.4%	0.0%	3.2%
VirtualQueue	250	242	96.8%	92.8%	3.6%	0.4%	0.0%	3.2%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	242	218	21	2	1
VirtualQueue	242	218	21	2	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	242	218	21	2	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	242
Total Saved Minutes	612
Average Saved Minutes / Return Call	3

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
218	90.4%	89	106	2

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
232	00:00:11	00:00:17

Dates: 1-Feb-05 thru 28-Feb-05
Generated on: 9-Aug-05 8:31:44 AM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
778	300	38.6%	478	61.4%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	300	284	94.7%	94.3%	0.0%	0.3%	0.0%	5.3%
VirtualQueue	300	284	94.7%	94.3%	0.0%	0.3%	0.0%	5.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	284	260	19	4	1
VirtualQueue	284	260	19	4	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	284	260	19	4	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 284

Total Saved Minutes 904

Average Saved Minutes / Return Call 3

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
260	86.5%	133	82	10

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
283	00:00:12	00:00:18

Dates: 1-Feb-05 thru 28-Feb-05
Generated on: 9-Aug-05 8:31:44 AM

Executive Summary Results for Queue MAService

Version 3.0

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
688	242	35.2%	446	64.8%

Calls presented with Return Call option only.

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	242	231	95.5%	93.4%	2.1%	0.0%	0.0%	4.5%
VirtualQueue	242	231	95.5%	93.4%	2.1%	0.0%	0.0%	4.5%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	231	205	17	8	1
VirtualQueue	231	205	17	8	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	231	205	17	8	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	231
Total Saved Minutes	599
Average Saved Minutes / Return Call	3
Average Dollar Savings / Return Call	\$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
205	88.3%	98	79	4

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
226	00:00:09	00:00:17

Dates: 1-Mar-05 thru 31-Mar-05
Generated on: 9-Aug-05 8:40:23 AM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
459	144	31.4%	315	68.6%

Calls presented with Return Call option only:

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	144	134	93.1%	93.1%	0.0%	0.0%	0.0%	6.9%
VirtualQueue	144	134	93.1%	93.1%	0.0%	0.0%	0.0%	6.9%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	134	124	9	1	0
VirtualQueue	134	124	9	1	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	134	124	9	1	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 134

Total Saved Minutes 195

Average Saved Minutes / Return Call 1

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
124	93.5%	51	64	1	134	00:00:08	00:00:14

Return Call - Hold Time Summary

Dates: 1-Mar-05 thru 31-Mar-05
Generated on: 9-Aug-05 8:40:23 AM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
941	328	34.9%	613	65.1%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	328	317	96.6%	95.1%	1.2%	0.3%	0.0%	3.4%
VirtualQueue	325	314	96.6%	95.1%	1.2%	0.3%	0.0%	3.4%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	3	3	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	317	286	22	6	3
VirtualQueue	314	284	22	5	3
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	314	284	22	5	3
Appointment	3	2	0	1	0
Appointment via Web	0	0	0	0	0
Subtotal • B	3	2	0	1	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	314
Total Saved Minutes	922
Average Saved Minutes / Return Call	3

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
284	86.6%	119	124	3	312	00:00:14	00:00:23

Return Call - Hold Time Summary

Dates: 1-Mar-05 thru 31-Mar-05
Generated on: 9-Aug-05 8:40:23 AM

Executive Summary Results for Queue MAService

Version 3.0

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
892	306	34.3%	586	65.7%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	306	297	97.1%	95.1%	1.6%	0.3%	0.0%	2.9%
VirtualQueue	303	294	97.0%	95.0%	1.7%	0.3%	0.0%	3.0%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	3	3	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	297	268	22	7	0
VirtualQueue	294	266	21	7	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	294	266	21	7	0
Appointment	3	2	1	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	3	2	1	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 294

Total Saved Minutes 743

Average Saved Minutes / Return Call 3

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
266	86.1%	116	106	7

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
291	00:00:12	00:00:21

Dates: 1-Apr-05 thru 30-Apr-05
Generated on: 9-Aug-05 8:46:10 AM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
191	63	33.0%	128	67.0%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	63	60	95.2%	95.2%	0.0%	0.0%	0.0%	4.8%
VirtualQueue	63	60	95.2%	95.2%	0.0%	0.0%	0.0%	4.8%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	60	53	5	2	0
VirtualQueue	60	53	5	2	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal - A	60	53	5	2	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal - B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	60
Total Saved Minutes	119
Average Saved Minutes / Return Call	2

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
53	92.5%	30	18	1

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
60	00:00:12	00:00:18

Dates: 1-Apr-05 thru 30-Apr-05
Generated on: 9-Aug-05 8:46:10 AM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
483	177	36.6%	306	63.4%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	177	173	97.7%	96.6%	0.6%	0.6%	0.0%	2.3%
VirtualQueue	177	173	97.7%	96.6%	0.6%	0.6%	0.0%	2.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	173	166	7	0	0
VirtualQueue	173	166	7	0	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	173	166	7	0	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	173
Total Saved Minutes	573
Average Saved Minutes / Return Call	3

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
166	87.3%	87	58	0

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
171	00:00:15	00:00:21

Dates: 1-Apr-05 thru 30-Apr-05
Generated on: 9-Aug-05 8:46:10 AM

Version 3.0

Executive Summary Results for Queue MAService

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
225	78	34.7%	147	65.3%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	78	75	96.2%	93.6%	1.3%	1.3%	0.0%	3.8%
VirtualQueue	78	75	96.2%	93.6%	1.3%	1.3%	0.0%	3.8%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	75	69	6	0	0
VirtualQueue	75	69	6	0	0
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	75	69	6	0	0
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 75

Total Saved Minutes 189

Average Saved Minutes / Return Call 3

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
69	95.7%	36	29	1	73	00:00:10	00:00:19

Return Call - Hold Time Summary

Dates: 1-May-05 thru 31-May-05
Generated on: 9-Aug-05 8:51:36 AM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
1,551	523	33.7%	1,028	66.3%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	523	495	94.6%	93.3%	1.1%	0.2%	0.0%	5.4%
VirtualQueue	521	495	95.0%	93.7%	1.2%	0.2%	0.0%	5.0%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	2	0	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	495	454	26	13	2
VirtualQueue	495	454	26	13	2
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	495	454	26	13	2
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	495
Total Saved Minutes	1,372
Average Saved Minutes / Return Call	3

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
454	90.5%	210	192	9

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
488	00:00:10	00:00:14

Dates: 1-May-05 thru 31-May-05

Generated on: 9-Aug-05 8:51:36 AM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
3,916	1,387	35.4%	2,529	64.6%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	1,387	1,338	96.5%	94.3%	1.6%	0.6%	0.0%	3.5%
VirtualQueue	1,378	1,332	96.7%	94.6%	1.6%	0.5%	0.0%	3.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	9	6	66.7%	55.6%	0.0%	11.1%	0.0%	33.3%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	1,338	1,227	84	21	6
VirtualQueue	1,332	1,222	83	21	6
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	1,332	1,222	83	21	6
Appointment	6	5	1	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	6	5	1	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	1,332
Total Saved Minutes	12,952
Average Saved Minutes / Return Call	10

Average Dollar Savings / Return Call	\$0.40
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
1,222	90.8%	541	553	16

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
1,308	00:00:11	00:00:18

Dates: 1-May-05 thru 31-May-05

Generated on: 9-Aug-05 8:51:36 AM

Version 3.0

Executive Summary Results for Queue MAService

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
2,547	919	36.1%	1,628	63.9%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	919	874	95.1%	94.0%	0.5%	0.5%	0.0%	4.9%
VirtualQueue	917	873	95.2%	94.2%	0.4%	0.5%	0.0%	4.8%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	2	1	50.0%	0.0%	50.0%	0.0%	0.0%	50.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	874	796	57	16	5
VirtualQueue	873	795	57	16	5
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	873	795	57	16	5
Appointment	1	1	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	1	1	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 873

Total Saved Minutes 6,768

Average Saved Minutes / Return Call 8

Average Dollar Savings / Return Call \$0.30

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
795	86.0%	356	313	15	864	00:00:11	00:00:20

Return Call - Hold Time Summary

Dates: 1-Jun-05 thru 30-Jun-05
Generated on: 9-Aug-05 9:00:17 AM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
1,221	386	31.6%	835	68.4%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	386	372	96.4%	96.1%	0.3%	0.0%	0.0%	3.6%
VirtualQueue	382	371	97.1%	96.9%	0.3%	0.0%	0.0%	2.9%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	4	1	25.0%	25.0%	0.0%	0.0%	0.0%	75.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	372	331	29	11	1
VirtualQueue	371	330	29	11	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	371	330	29	11	1
Appointment	1	1	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	1	1	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect 371

Total Saved Minutes 970

Average Saved Minutes / Return Call 3

Average Dollar Savings / Return Call \$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
330	94.8%	151	154	8

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
371	00:00:09	00:00:13

Dates: 1-Jun-05 thru 30-Jun-05
Generated on: 9-Aug-05 9:00:17 AM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
4,465	1,442	32.3%	3,023	67.7%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	1,442	1,395	96.7%	95.7%	0.8%	0.2%	0.0%	3.3%
VirtualQueue	1,436	1,390	96.8%	95.8%	0.8%	0.2%	0.0%	3.2%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	6	5	83.3%	83.3%	0.0%	0.0%	0.0%	16.7%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	1,395	1,279	80	28	8
VirtualQueue	1,390	1,277	78	28	7
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal - A	1,390	1,277	78	28	7
Appointment	5	2	2	0	1
Appointment via Web	0	0	0	0	0
Subtotal - B	5	2	2	0	1

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	1,390
Total Saved Minutes	5,157
Average Saved Minutes / Return Call	4

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
1,277	92.1%	587	571	18	1,380	00:00:10	00:00:15

Return Call - Hold Time Summary

Dates: 1-Jun-05 thru 30-Jun-05
Generated on: 9-Aug-05 9:00:17 AM

Version 3.0

Executive Summary Results for Queue MAService

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
2,492	810	32.5%	1,682	67.5%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	810	773	95.4%	94.7%	0.6%	0.1%	0.0%	4.6%
VirtualQueue	806	771	95.7%	94.9%	0.6%	0.1%	0.0%	4.3%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	4	2	50.0%	50.0%	0.0%	0.0%	0.0%	50.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	773	706	49	16	2
VirtualQueue	771	704	49	16	2
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	771	704	49	16	2
Appointment	2	2	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	2	2	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	771
Total Saved Minutes	2,573
Average Saved Minutes / Return Call	3
Average Dollar Savings / Return Call	\$0.10

Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
704	91.9%	315	314	18	767	00:00:11	00:00:17

Return Call - Hold Time Summary

Dates: 1-Jul-05 thru 31-Jul-05
Generated on: 9-Aug-05 9:06:54 AM

Version 3.0

Executive Summary Results for Queue MABilling

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
505	155	30.7%	350	69.3%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	155	146	94.2%	93.5%	0.6%	0.0%	0.0%	5.8%
VirtualQueue	155	146	94.2%	93.5%	0.6%	0.0%	0.0%	5.8%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	146	134	10	0	2
VirtualQueue	146	134	10	0	2
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	146	134	10	0	2
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	146
Total Saved Minutes	196
Average Saved Minutes / Return Call	1

Average Dollar Savings / Return Call	\$0.00
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
134	93.3%	57	68	0	145	00:00:09	00:00:12

Return Call - Hold Time Summary

Dates: 1-Jul-05 thru 31-Jul-05
Generated on: 9-Aug-05 9:06:54 AM

Version 3.0

Executive Summary Results for Queue MACredit

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
1,766	542	30.7%	1,224	69.3%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	542	521	96.1%	94.5%	1.7%	0.0%	0.0%	3.9%
VirtualQueue	542	521	96.1%	94.5%	1.7%	0.0%	0.0%	3.9%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	521	472	34	14	1
VirtualQueue	521	472	34	14	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	521	472	34	14	1
Appointment	0	0	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	0	0	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	521
Total Saved Minutes	794
Average Saved Minutes / Return Call	2

Average Dollar Savings / Return Call	\$0.10
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes	Connected to an Agent	Median	Average
472	94.5%	220	223	3	512	00:00:08	00:00:13

Return Call - Hold Time Summary

Dates: 1-Jul-05 thru 31-Jul-05
Generated on: 9-Aug-05 9:06:54 AM

Version 3.0

Executive Summary Results for Queue MAService

Calls presented with Return Call & Hold options

Calls	Return Calls	% Return Calls	Hold	% Hold
863	271	31.4%	592	68.6%

Calls presented with Return Call option only

Return Calls Only	After Hours
0	0

Return Call Results by Type Summary - All Return Calls is the sum of Return Calls and the Return Call Only fields

	All Return Calls	Successful Reconnect	% Successful Reconnect	% Connected to an Agent	% Cancelled	% Abandon	% Call Event Not Received	% Unsuccessful
Total	271	249	91.9%	84.5%	0.7%	6.6%	0.0%	8.1%
VirtualQueue	270	248	91.9%	84.4%	0.7%	6.7%	0.0%	8.1%
VirtualQueue via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Appointment	1	1	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Appointment via Web	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ResQueue	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Successful Reconnect by Type Summary

	Successful Reconnect	1st Attempt	2nd Attempt	3rd Attempt	4 or More Attempts
Total	249	229	16	3	1
VirtualQueue	248	228	16	3	1
VirtualQueue via Web	0	0	0	0	0
ResQueue	0	0	0	0	0
Subtotal • A	248	228	16	3	1
Appointment	1	1	0	0	0
Appointment via Web	0	0	0	0	0
Subtotal • B	1	1	0	0	0

Saved Minutes Summary

Only VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

Successful Reconnect	248
Total Saved Minutes	4,080
Average Saved Minutes / Return Call	16

Average Dollar Savings / Return Call	\$0.60
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Punctuality Summary

Only 1st Attempt VirtualQueue, VirtualQueue via Web and ResQueue Reconnect calls

1st Attempt	% +/- 3 minutes	# (-3) to (-1) minutes	# (-1) to (+1) minutes	# (+1) to (+3) minutes
228	91.2%	107	101	0

Return Call - Hold Time Summary

Connected to an Agent	Median	Average
229	00:00:10	00:00:13

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO
RECORD REQUESTS FROM THE USWA, AFL-CIO\CLC

D.T.E. 05-27

Date: August 18, 2005

Responsible: Stephen H. Bryant, President

RR-USWA-18: If available, provide statistics/records, from 1999 to 2005, of performance by Bay State in first-call customer resolution.

Response: Attachment RR-USWA-18 contains copies of Springfield Call Center Flash Reports covering the period of August 2003 to present.

Springfield Contact Center August Flash Report 2003

	Springfield Contact Center			
	August	Change	3-Month Avg.	12-Month Avg.
N=	212	-27	650	2574
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	82%	+20%*	70%*	63%*
• Variety of services offered (Q5a)	83%	+10%	72%*	72%*
• Understanding options/directions (Q5b)	86%	+15%*	75%*	78%*
• Time to get to desired option (Q5c)	80%	+17%*	66%*	65%*
• Time to complete transaction (Q5d)	100%	+60%*	66%*	57%*
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	88%	+9%	83%	79%*
• Wait time to speak with rep (Q7)	83%	+7%	76%	72%*
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	94%	+5%	92%	92%
• Being courteous and professional (Q8b)	95%	+5%	94%	94%
• Treating as respected customer (Q8c)	94%	+5%	92%	93%
• Showing concern for situation (Q8d)	91%	+6%	89%	90%
• Displaying knowledge in job (Q8e)	94%	+3%	90%	91%
• Adequately answering questions (Q8f)	93%	+4%	92%	91%
• Understanding purpose for call (Q8g)	95%	+6%	93%	92%
• Having authority to make decisions (Q8h)	90%	+5%	90%	90%
• Working quickly and efficiently (Q8i)	90%	+2%	90%	91%
• Satisfied request in one conversation (Q9b - % Yes)	63%	-3%	65%	61%
• Performance vs. peer utilities (Q10c - % Better or Same)	83%	+9%	80%	76%

* Indicates a statistically significant change/difference from current month's rating at 95% confidence level.
 Note: "Change" column represents the change of current month's ratings from previous month's ratings.
 Except where otherwise noted, all percentages are the percent of customers giving a rating of 6 or higher on a ten-point scale.

About This Report

This report presents the monthly results of the customer satisfaction audits of recent service contacts for the seven NiSource operating companies. Unless otherwise stated, all percentages represent the percentage of customers who evaluated that particular aspect of their service experience a "6" or higher on a ten-point scale. Most results are based on the entire sample of customers surveyed noted above. However, the reader should be advised that the following questions are based on a smaller sample size and should be interpreted with caution:

- Q5f -- Based only on those customers who completed their entire transaction through the automated phone system
- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center September Flash Report

	Springfield Contact Center			
	September	Change	3-Month Avg.	12-Month Avg.
N=	209	-3	660	2583
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	71%	-12%	71%	63%
• Variety of services offered (Q5a)	71%	-12%	76%	71%
• Understanding options/directions (Q5b)	85%	-1%	79%	78%
• Time to get to desired option (Q5c)	63%	-17%*	68%	65%
• Time to complete transaction (Q5d)	-	-100%	56%	57%
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	87%	-1%	84%	79%*
• Wait time to speak with rep (Q7)	79%	-4%	79%	72%
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	96%	+2%	92%	92%
• Being courteous and professional (Q8b)	98%	+2%	94%	94%*
• Treating as respected customer (Q8c)	98%	+3%	93%*	93%*
• Showing concern for situation (Q8d)	95%	+4%	90%	89%*
• Displaying knowledge in job (Q8e)	96%	+2%	93%	90%*
• Adequately answering questions (Q8f)	99%	+7%*	93%*	91%*
• Understanding purpose for call (Q8g)	96%	+1%	93%	92%*
• Having authority to make decisions (Q8h)	97%	+7%	90%*	90%*
• Working quickly and efficiently (Q8i)	96%	+6%	91%*	91%*
• Satisfied request in one conversation (Q9b - % Yes)	73%	+10%	67%	61%*
• Performance vs. peer utilities (Q10c - % Better or Same)	68%	-16%	76%	75%

* Indicates a statistically significant change/difference from current month's rating at 95% confidence level.
Note: "Change" column represents the change of current month's ratings from previous month's ratings. Except where otherwise noted, all percentages are the percent of customers giving a rating of 6 or higher on a ten-point scale.

About This Report

This report presents the monthly results of the customer satisfaction audits of recent service contacts for the seven NiSource operating companies. Unless otherwise stated, all percentages represent the percentage of customers who evaluated that particular aspect of their service experience a "6" or higher on a ten-point scale. Most results are based on the entire sample of customers surveyed noted above. However, the reader should be advised that the following questions are based on a smaller sample size and should be interpreted with caution:

- Q5f -- Based only on those customers who completed their entire transaction through the automated phone system
- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center October Flash Report 2003

		Springfield Contact Center			
		October	Change	3-Month Avg.	12-Month Avg.
N=		240	31	661	2627
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		78%	+8%	78%	65%*
• Variety of services offered (Q5a)		82%	+10%	80%	72%*
• Understanding options/directions (Q5b)		85%	-	85%	78%*
• Time to get to desired option (Q5c)		82%	+19%*	77%	67%*
• Time to complete transaction (Q5d)		-	-	100%	55%
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		81%	-6%	85%	79%
• Wait time to speak with rep (Q7)		85%	+6%	83%	72%*
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		94%	-2%	94%	92%
• Being courteous and professional (Q8b)		95%	-2%	96%	94%
• Treating as respected customer (Q8c)		93%	-5%	94%	93%
• Showing concern for situation (Q8d)		90%	-5%	91%	89%
• Displaying knowledge in job (Q8e)		96%	+1%	95%	91%*
• Adequately answering questions (Q8f)		96%	-3%	96%	92%*
• Understanding purpose for call (Q8g)		98%	+2%	96%	92%*
• Having authority to make decisions (Q8h)		91%	-6%	92%	90%
• Working quickly and efficiently (Q8i)		90%	-5%	91%	91%
• Satisfied request in one conversation (Q9b - % Yes)		61%	-11%	64%	61%
• Performance vs. peer utilities (Q10c - % Better or Same)		81%	+13%	78%	76%

** Indicates a statistically significant change/difference from current month's rating at 95% confidence level.
Note: "Change" column represents the change of current month's ratings from previous month's ratings.
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- Q5f -- Based only on those customers who completed their entire transaction through the automated phone system
- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center November Flash Report

	Springfield Contact Center			
	November	Change	3-Month Avg.	12-Month Avg.
N=	188	-52	637	2657
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	69%	-9%	73%	66%
• Variety of services offered (Q5a)	76%	-5%	78%	73%
• Understanding options/directions (Q5b)	77%	-9%	82%	78%
• Time to get to desired option (Q5c)	76%	-5%	76%	68%
• Time to complete transaction (Q5d)	-	-	-	55%
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	76%	-5%	81%	79%
• Wait time to speak with rep (Q7)	82%	-3%	83%	73%*
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	80%	-14%*	89%*	92%*
• Being courteous and professional (Q8b)	90%	-5%	94%	94%
• Treating as respected customer (Q8c)	91%	-2%	93%	94%
• Showing concern for situation (Q8d)	81%	-9%	88%	89%*
• Displaying knowledge in job (Q8e)	82%	-14%*	91%*	90%*
• Adequately answering questions (Q8f)	88%	-9%*	94%	92%
• Understanding purpose for call (Q8g)	85%	-13%*	93%*	92%*
• Having authority to make decisions (Q8h)	86%	-4%	90%	89%
• Working quickly and efficiently (Q8i)	84%	-6%	89%	91%
• Satisfied request in one conversation (Q9b - % Yes)	53%	-8%	61%	61%
• Performance vs. peer utilities (Q10c - % Better or Same)	75%	-6%	75%	75%

** Indicates a statistically significant change/difference from current month's rating at 95% confidence level.*

Note: "Change" column represents the change of current month's ratings from previous month's ratings.

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center December Flash Report

		Springfield Contact Center			
		December	Change	3-Month Avg.	12-Month Avg.
N=		187	-1	615	2555
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		74%	+5%	74%	67%
• Variety of services offered (Q5a)		74%	-2%	78%	73%
• Understanding options/directions (Q5b)		83%	+7%	82%	78%
• Time to get to desired option (Q5c)		77%	-	79%	69%
• Time to complete transaction (Q5d)		-	-	-	55%
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		86%	+10%	81%	78%*
• Wait time to speak with rep (Q7)		80%	-2%	83%	72%*
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		90%	+11%*	88%	93%
• Being courteous and professional (Q8b)		92%	+2%	93%	94%
• Treating as respected customer (Q8c)		92%	+1%	92%	94%
• Showing concern for situation (Q8d) →		90%	+8%	87%	90%
• Displaying knowledge in job (Q8e)		89%	+7%	90%	90%
• Adequately answering questions (Q8f)		88%	-	91%	92%
• Understanding purpose for call (Q8g)		91%	+7%	92%	92%
• Having authority to make decisions (Q8h) →		85%	-1%	88%	90%
• Working quickly and efficiently (Q8i)		90%	+5%	88%	91%
• Satisfied request in one conversation (Q9b - % Yes)		63%	+10%	59%	62%
• Performance vs. peer utilities (Q10c - % Better or Same)		80%	+5%	79%	75%

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Springfield Contact Center January Flash Report

		Springfield Contact Center			
		January	Change	3-Month Avg.	12-Month Avg.
N=		247	60	622	2569
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		81%	+7%	76%	68%*
• Variety of services offered (Q5a)		83%	+9%	79%	75%*
• Understanding options/directions (Q5b)		90%	+7%	84%	80%*
• Time to get to desired option (Q5c)		85%	+8%	80%	70%*
• Time to complete transaction (Q5d)		-	-	-	53%
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		92%	+6%	86%*	80%*
• Wait time to speak with rep (Q7)		84%	+3%	82%	74%*
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		95%	+5%	89%*	93%
• Being courteous and professional (Q8b)		96%	+4%	93%	95%
• Treating as respected customer (Q8c)		96%	+4%	94%	94%
• Showing concern for situation (Q8d)		89%	-	87%	90%
• Displaying knowledge in job (Q8e)		95%	+5%	90%*	91%
• Adequately answering questions (Q8f)		94%	+6%	91%	93%
• Understanding purpose for call (Q8g)		95%	+4%	91%	93%
• Having authority to make decisions (Q8h)		90%	+5%	88%	90%
• Working quickly and efficiently (Q8i)		92%	+2%	89%	92%
• Satisfied request in one conversation (Q9b - % Yes)		74%	+11%*	65%*	63%*
• Performance vs. peer utilities (Q10c - % Better or Same)		85%	+5%	82%	77%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center February Flash Report

		Springfield Contact Center			
		February	Change	3-Month Avg.	12-Month Avg.
N=		179	-68	613	2537
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		58%	-23%*	74%*	68%*
• Variety of services offered (Q5a)		63%	-20%*	76%*	74%*
• Understanding options/directions (Q5b)		73%	-17%*	84%*	81%
• Time to get to desired option (Q5c)		54%	-31%*	76%*	70%*
• Time to complete transaction (Q5d)		-	-	-	53%*
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		88%	-4%	89%	80%*
• Wait time to speak with rep (Q7)		83%	-1%	83%	75%*
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		94%	-1%	94%	93%
• Being courteous and professional (Q8b)		96%	-	95%	95%
• Treating as respected customer (Q8c)		95%	-1%	95%	94%
• Showing concern for situation (Q8d)		91%	+1%	90%	90%
• Displaying knowledge in job (Q8e)		90%	-4%	92%	92%
• Adequately answering questions (Q8f)		91%	-3%	92%	93%
• Understanding purpose for call (Q8g)		97%	+1%	95%	94%
• Having authority to make decisions (Q8h)		90%	+1%	89%	91%
• Working quickly and efficiently (Q8i)		91%	-1%	91%	92%
• Satisfied request in one conversation (Q9b - % Yes)		67%	-6%	70%	65%
• Performance vs. peer utilities (Q10c - % Better or Same)		84%	-1%	84%	79%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center March Flash Report

		Springfield Contact Center			
		March	Change	3-Month Avg.	12-Month Avg.
N=		180	1	606	2517
Automated Phone Service					
• Overall satisfaction (Q4a)		79%	+21%*	75%	69%*
• Variety of services offered (Q5a)		86%	+23%*	79%	75%*
• Understanding options/directions (Q5b)		90%	+17%*	86%	81%*
• Time to get to desired option (Q5c)		77%	+23%*	75%	70%
• Time to complete transaction (Q5d)		40%	+40%	35%	53%
Phone Rep Availability					
• Ease of contacting company (Q3a)		90%	+2%	91%	81%*
• Wait time to speak with rep (Q7)		82%	-	83%	76%
Phone Rep Performance					
• Overall performance (Q8a)		92%	-2%	94%	93%
• Being courteous and professional (Q8b)		93%	-3%	95%	95%
• Treating as respected customer (Q8c)		95%	-	96%	95%
• Showing concern for situation (Q8d)		94%	+3%	90%	90%
• Displaying knowledge in job (Q8e)		93%	+2%	93%	92%
• Adequately answering questions (Q8f)		95%	+4%	93%	93%
• Understanding purpose for call (Q8g)		92%	-4%	95%	94%
• Having authority to make decisions (Q8h)		90%	-1%	90%	91%
• Working quickly and efficiently (Q8i)		93%	+2%	92%	92%
• Satisfied request in one conversation (Q9b - % Yes)		75%	+7%	72%	65%
• Performance vs. peer utilities (Q10c - % Better or Same)		64%	-20%	82%	78%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center April Flash Report

		Springfield Contact Center			
		April	Change	3-Month Avg.	12-Month Avg.
N=		213	+33	819	2488
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		59%	-19%*	71%*	69%
• Variety of services offered (Q5a)		66%	-21%*	76%	74%
• Understanding options/directions (Q5b)		78%	-12%*	84%	81%
• Time to get to desired option (Q5c)		57%	-20%*	72%*	71%*
• Time to complete transaction (Q5d)		100%	+60%*	54%*	41%*
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		84%	-6%	89%	82%
• Wait time to speak with rep (Q7)		66%	-16%*	79%*	77%*
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		95%	+3%	94%	93%
• Being courteous and professional (Q8b)		96%	+3%	96%	95%
• Treating as respected customer (Q8c)		95%	-	96%	94%
• Showing concern for situation (Q8d)		90%	-4%	90%	90%
• Displaying knowledge in job (Q8e)		93%	+1%	93%	92%
• Adequately answering questions (Q8f)		94%	-	93%	93%
• Understanding purpose for call (Q8g)		93%	+1%	95%	94%
• Having authority to make decisions (Q8h)		90%	+1%	90%	91%
• Working quickly and efficiently (Q8i)		90%	-3%	91%	91%
• Satisfied request in one conversation (Q9b - % Yes)		76%	+1%	73%	67%*
• Performance vs. peer utilities (Q10c - % Better or Same)		88%	+24%	83%	78%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center May Flash Report 2004

	Springfield Contact Center			
	May	Change	3-Month Avg.	12-Month Avg.
N=	190	-23	1009	2483
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	67%	+8%	71%	71%
• Variety of services offered (Q5a)	82%	+16%*	77%	76%
• Understanding options/directions (Q5b)	74%	-4%	82%	80%
• Time to get to desired option (Q5c)	76%	+19%*	72%	72%
• Time to complete transaction (Q5d)	75%	-25%	65%	66%
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	95%	+11%*	90%*	85%*
• Wait time to speak with rep (Q7)	85%	+19%*	80%	80%
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	98%	+3%	95%	92%*
• Being courteous and professional (Q8b)	100%	+4%*	96%*	95%*
• Treating as respected customer (Q8c)	100%	+5%*	96%*	94%*
• Showing concern for situation (Q8d)	99%	+9%*	92%*	90%*
• Displaying knowledge in job (Q8e)	99%	+6%*	94%*	92%*
• Adequately answering questions (Q8f)	99%	+4%	94%*	93%*
• Understanding purpose for call (Q8g)	99%	+6%*	95%*	94%*
• Having authority to make decisions (Q8h)	97%	+7%	91%*	90%*
• Working quickly and efficiently (Q8i)	100%	+10%*	93%*	91%*
• Satisfied request in one conversation (Q9b - % Yes)	81%	+5%	74%	68%*
• Performance vs. peer utilities (Q10c - % Better or Same)	86%	-2%	84%	80%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center June Flash Report 2008

		Springfield Contact Center			
		June	Change	3-Month Avg.	12-Month Avg.
N=		196	6	1205	2480
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		78%	+11%	71%	72%
• Variety of services offered (Q5a)		83%	+2%	78%	77%
• Understanding options/directions (Q5b)		90%	+16%*	83%*	82%*
• Time to get to desired option (Q5c)		75%	-1%	73%	73%
• Time to complete transaction (Q5d)		50%	-25%	64%	57%
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		92%	-3%	90%	86%*
• Wait time to speak with rep (Q7)		86%	+2%	81%	81%
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		98%	-	95%	93%*
• Being courteous and professional (Q8b)		97%	-3%	96%	95%
• Treating as respected customer (Q8c)		94%	-6%*	96%	94%
• Showing concern for situation (Q8d)		91%	-8%*	92%	90%
• Displaying knowledge in job (Q8e)		97%	-2%	94%	93%*
• Adequately answering questions (Q8f)		96%	-3%	94%	93%
• Understanding purpose for call (Q8g)		99%	-1%	96%*	94%*
• Having authority to make decisions (Q8h)		96%	-1%	92%	90%*
• Working quickly and efficiently (Q8i)		94%	-6%*	93%	91%
• Satisfied request in one conversation (Q9b - % Yes)		74%	-7%	74%	68%
• Performance vs. peer utilities (Q10c - % Better or Same)		85%	-1%	84%	81%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center July Flash Report

		Springfield Contact Center			
		July	Change	3-Month Avg.	12-Month Avg.
N=		252	+56	638	2493
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		60%	-18%*	67%	72%*
• Variety of services offered (Q5a)		72%	-11%*	78%	77%
• Understanding options/directions (Q5b)		72%	-18%*	77%	82%*
• Time to get to desired option (Q5c)		69%	-5%	73%	74%
• Time to complete transaction (Q5d)		50%	-	64%	86%
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		89%	-3%	92%	87%
• Wait time to speak with rep (Q7)		77%	-9%	82%	81%
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		96%	-2%	97%	93%
• Being courteous and professional (Q8b)		94%	-3%	97%	95%
• Treating as respected customer (Q8c)		96%	+2%	97%	95%
• Showing concern for situation (Q8d)		95%	+3%	95%	91%*
• Displaying knowledge in job (Q8e)		95%	-2%	97%	93%
• Adequately answering questions (Q8f)		94%	-2%	96%	94%
• Understanding purpose for call (Q8g)		92%	-7%*	96%	94%
• Having authority to make decisions (Q8h)		90%	-6%	94%	91%
• Working quickly and efficiently (Q8i)		94%	+1%	96%	92%
• Satisfied request in one conversation (Q9b - % Yes)		70%	-4%	75%	68%
• Performance vs. peer utilities (Q10c - % Better or Same)		80%	-5%	83%	81%

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center August Flash Report

		Springfield Contact Center			
		August	Change	3-Month Avg.	12-Month Avg.
N=		202	-50	650	2483
<u>Automated Phone Service</u>					
• Overall satisfaction (Q4a)		64%	+4%	66%	71%
• Variety of services offered (Q5a)		73%	+1%	75%	76%
• Understanding options/directions (Q5b)		77%	+5%	78%	81%
• Time to get to desired option (Q5c)		64%	-5%	68%	73%
• Time to complete transaction (Q5d)		100%	+50%	89%	80%*
<u>Phone Rep Availability</u>					
• Ease of contacting company (Q3a)		97%	+8%*	93%	88%*
• Wait time to speak with rep (Q7)		84%	+6%	82%	81%
<u>Phone Rep Performance</u>					
• Overall performance (Q8a)		93%	-3%	95%	93%
• Being courteous and professional (Q8b)		97%	+2%	96%	95%
• Treating as respected customer (Q8c)		95%	-1%	95%	95%
• Showing concern for situation (Q8d)		97%	+3%	95%	91%*
• Displaying knowledge in job (Q8e)		97%	+2%	96%	94%
• Adequately answering questions (Q8f)		96%	+2%	95%	94%
• Understanding purpose for call (Q8g)		93%	+1%	94%	94%
• Having authority to make decisions (Q8h)		94%	+5%	93%	91%
• Working quickly and efficiently (Q8i)		93%	-1%	94%	92%
• Satisfied request in one conversation (Q9b - % Yes)		74%	+4%	73%	69%
• Performance vs. peer utilities (Q10c - % Better or Same)		82%	+2%	82%	81%

** Indicates a statistically significant change/difference from current month's rating at 95% confidence level.
Not2: "Change" column represents the change of current month's ratings from previous month's ratings.
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- Q5f -- Based only on those customers who completed their entire transaction through the automated phone system
- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center September Flash Report 2008

	Springfield Contact Center			
	September	Change	3-Month Avg.	12-Month Avg.
N=	199	-3	653	2473
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	73%	+9%	66%	71%
• Variety of services offered (Q5a)	76%	+3%	74%	77%
• Understanding options/directions (Q5b)	82%	+5%	77%	81%
• Time to get to desired option (Q5c)	73%	+9%	69%	73%
• Time to complete transaction (Q5d)	100%	-	93%	84%*
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	86%	-11%*	91%	88%
• Wait time to speak with rep (Q7)	77%	-7%	80%	81%
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	92%	-1%	93%	93%
• Being courteous and professional (Q8b)	95%	-2%	95%	95%
• Treating as respected customer (Q8c)	95%	-	95%	95%
• Showing concern for situation (Q8d)	94%	-4%	95%	91%
• Displaying knowledge in job (Q8e)	95%	-2%	95%	94%
• Adequately answering questions (Q8f)	93%	-3%	94%	94%
• Understanding purpose for call (Q8g)	93%	-	92%	94%
• Having authority to make decisions (Q8h)	95%	-	93%	91%
• Working quickly and efficiently (Q8i)	92%	-1%	93%	92%
• Satisfied request in one conversation (Q9b - % Yes)	70%	-4%	71%	69%
• Performance vs. peer utilities (Q10c - % Better or Same)	81%	-	81%	82%

** Indicates a statistically significant change/difference from current month's rating at 95% confidence level.*

Note: "Change" column represents the change of current month's ratings from previous month's ratings.

Except where otherwise noted, all percentages are the percent of customers giving a rating of 6 or higher on a ten-point scale.

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center October Flash Report

	Springfield Contact Center			
	October	Change	3-Month Avg.	12-Month Avg.
N=	233	+34	634	2466
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	71%	-2%	69%	70%
• Variety of services offered (Q5a)	86%	+10%	79%	77%*
• Understanding options/directions (Q5b)	86%	+4%	82%	81%
• Time to get to desired option (Q5c)	80%	+6%	73%	73%
• Time to complete transaction (Q5d)	100%	-	100%	85%*
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	86%	+1%	90%	88%
• Wait time to speak with rep (Q7)	87%	+10%	83%	81%
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	95%	+3%	93%	93%
• Being courteous and professional (Q8b)	99%	+4%	97%	96%*
• Treating as respected customer (Q8c)	98%	+3%	96%	95%*
• Showing concern for situation (Q8d)	96%	+2%	96%	92%*
• Displaying knowledge in job (Q8e)	95%	-	95%	93%
• Adequately answering questions (Q8f)	94%	+1%	94%	93%
• Understanding purpose for call (Q8g)	96%	+3%	94%	94%
• Having authority to make decisions (Q8h)	94%	-1%	94%	91%
• Working quickly and efficiently (Q8i)	93%	+1%	93%	92%
• Satisfied request in one conversation (Q9b - % Yes)	73%	+3%	72%	71%
• Performance vs. peer utilities (Q10c - % Better or Same)	84%	+3%	83%	82%

* Indicates a statistically significant change/difference from current month's rating at 95% confidence level.

Notc: "Change" column represents the change of current month's ratings from previous month's ratings.

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center November Flash Report

	Springfield Contact Center			
	November	Change	3-Month Avg.	12-Month Avg.
N=	233	-	665	2511
<u>Automated Phone Service</u>				
• Overall satisfaction (Q4a)	62%	-9%	68%	69%
• Variety of services offered (Q5a)	69%	-17%*	77%	76%
• Understanding options/directions (Q5b)	75%	-11%*	81%	81%
• Time to get to desired option (Q5c)	70%	-10%	74%	72%
• Time to complete transaction (Q5d)	100%	-	100%	87%*
<u>Phone Rep Availability</u>				
• Ease of contacting company (Q3a)	86%	-1%	86%	89%
• Wait time to speak with rep (Q7)	84%	-3%	83%	82%
<u>Phone Rep Performance</u>				
• Overall performance (Q8a)	91%	-3%	93%	94%
• Being courteous and professional (Q8b)	92%	-7%*	95%	96%
• Treating as respected customer (Q8c)	92%	-6%*	95%	95%
• Showing concern for situation (Q8d)	87%	-9%*	92%	92%
• Displaying knowledge in job (Q8e)	89%	-6%	93%	94%
• Adequately answering questions (Q8f)	90%	-3%	92%	93%
• Understanding purpose for call (Q8g)	91%	-5%	93%	94%
• Having authority to make decisions (Q8h)	82%	-12%*	90%*	91%*
• Working quickly and efficiently (Q8i)	91%	-2%	92%	92%
• Satisfied request in one conversation (Q9b - % Yes)	69%	-4%	71%	72%
• Performance vs. peer utilities (Q10c - % Better or Same)	78%	-6%	81%	82%

* Indicates a statistically significant change/difference from current month's rating at 95% confidence level.

Note: "Change" column represents the change of current month's ratings from previous month's ratings.

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Springfield Contact Center December Flash Report

		Springfield Contact Center			
		December	Change	3-Month Avg.	12-Month Avg.
		N= 195	-38	661	2519
<u>Phone Rep Performance</u>					
	N=	118	-24	397	1477
• Overall performance (Q8a)		96%	+4%	94%	94%
	N=	117	-24	397	1479
• Being courteous and professional (Q8b)		96%	+4%	96%	96%
	N=	116	-26	397	1480
• Treating as respected customer (Q8c)		96%	+4%	95%	96%
	N=	115	-26	394	1466
• Showing concern for situation (Q8d)		94%	+7%	92%	93%
	N=	115	-23	386	1452
• Displaying knowledge in job (Q8e)		93%	+3%	92%	94%
	N=	114	-24	390	1461
• Adequately answering questions (Q8f)		94%	+4%	93%	94%
	N=	118	-22	395	1475
• Understanding purpose for call (Q8g)		94%	+3%	94%	94%
	N=	108	-23	372	1410
• Having authority to make decisions (Q8h)		94%	+12%*	90%	91%
	N=	116	-25	392	1465
• Working quickly and efficiently (Q8i)		92%	+2%	92%	93%
	N=	118	-19	393	1465
• Satisfied request in one conversation (Q9b - % Yes)		76%	+7%	73%	73%
	N=	25	-7	93	366
• Performance vs. peer utilities (Q10c - % Better or Same)		81%	+3%	81%	82%

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Note: "Change" column represents the change of current month's ratings from previous month's ratings.

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Springfield Contact Center January Flash Report

		Springfield Contact Center			
		January	Change	3-Month Avg.	12-Month Avg.
		N= 204	+9	632	2476
<u>Phone Rep Performance</u>					
	N=	141	+23	401	1426
• Overall performance (Q8a)		98%	+2%	95%	95%*
	N=	141	+24	399	1428
• Being courteous and professional (Q8b)		98%	+2%	95%*	96%*
	N=	142	+26	400	1430
• Treating as respected customer (Q8c)		97%	+1%	95%	96%
	N=	142	+27	398	1416
• Showing concern for situation (Q8d)		95%	+1%	91%	93%
	N=	139	+24	392	1401
• Displaying knowledge in job (Q8e)		98%	+5%	93%*	94%*
	N=	141	+27	393	1412
• Adequately answering questions (Q8f)		97%	+3%	94%	94%
	N=	138	+20	396	1421
• Understanding purpose for call (Q8g)		96%	+2%	94%	94%
	N=	136	+28	375	1362
• Having authority to make decisions (Q8h)		93%	-1%	89%	92%
	N=	138	+22	395	1411
• Working quickly and efficiently (Q8i)		96%	+3%	93%	93%
	N=	140	+22	395	1413
• Satisfied request in one conversation (Q9b - % Yes)		62%	-15%*	69%	72%*
	N=	27	+2	84	343
• Performance vs. peer utilities (Q10c - % Better or Same)		84%	+3%	81%	82%

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Note: "Change" column represents the change of current month's ratings from previous month's ratings.
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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center February Flash Report

		Springfield Contact Center			
		February	Change	3-Month Avg.	12-Month Avg.
N=		178	-26	577	2476
Phone Rep Performance					
N=		105	-36	364	1420
• Overall performance (Q8a)		96%	-2%	97%	95%
N=		105	-36	363	1422
• Being courteous and professional (Q8b)		98%	-1%	98%	96%
N=		105	-37	363	1424
• Treating as respected customer (Q8c)		95%	-2%	96%	96%
N=		105	-37	362	1411
• Showing concern for situation (Q8d)		91%	-3%	93%	93%
N=		103	-36	357	1396
• Displaying knowledge in job (Q8e)		94%	-4%	95%	95%
N=		103	-38	358	1405
• Adequately answering questions (Q8f)		95%	-2%	96%	95%
N=		105	-33	361	1415
• Understanding purpose for call (Q8g)		93%	-3%	95%	94%
N=		100	-36	344	1356
• Having authority to make decisions (Q8h).		90%	-3%	93%	92%
N=		104	-34	358	1404
• Working quickly and efficiently (Q8i)		93%	-3%	94%	93%
N=		105	-35	363	1408
• Satisfied request in one conversation (Q9b - % Yes)		74%	+12%*	70%	72%
N=		19	-8	71	334
• Performance vs. peer utilities (Q10c - % Better or Same)		84%	-	83%	82%

** Indicates a statistically significant change/difference from current month rating at 95% confidence level.
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Springfield Contact Center March Flash Report

		Springfield Contact Center			
		March	Change	3-Month Avg.	12-Month Avg.
N=		230	+52	612	2525
<u>Phone Rep Performance</u>					
N=		130	+25	376	1466
• Overall performance (Q8a)		98%	+2%	97%	95%*
N=		130	+25	376	1468
• Being courteous and professional (Q8b)		95%	-3%	98%	96%
N=		130	+25	377	1471
• Treating as respected customer (Q8c)		95%	-1%	96%	96%
N=		131	+26	378	1458
• Showing concern for situation (Q8d)		95%	+4%	93%	93%
N=		128	+25	370	1440
• Displaying knowledge in job (Q8e)		97%	+3%	96%	95%
N=		131	+28	375	1452
• Adequately answering questions (Q8f)		97%	+2%	96%	95%
N=		130	+25	373	1461
• Understanding purpose for call (Q8g)		98%	+4%	96%	94%*
N=		121	+21	357	1396
• Having authority to make decisions (Q8h)		94%	+4%	93%	92%
N=		131	+27	373	1451
• Working quickly and efficiently (Q8i)		95%	+1%	95%	93%
N=		129	+24	374	1453
• Satisfied request in one conversation (Q9b - % Yes)		73%	-	68%	72%
N=		28	+9	74	344
• Performance vs. peer utilities (Q10c - % Better or Same)		93%	+8%	87%	83%

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Springfield Contact Center April Flash Report

		Springfield Contact Center			
		April	Change	3-Month Avg.	12-Month Avg.
Phone Rep Performance					
	N=	204	-26	612	2510
• Overall performance (Q8a)	N=	99	-31	334	1455
		96%	-2%	97%	95%
• Being courteous and professional (Q8b)	N=	160	-30	335	1456
		96%	+1%	97%	96%
• Treating as respected customer (Q8c)	N=	100	-30	335	1459
		97%	+3%	96%	96%
• Showing concern for situation (Q8d)	N=	99	-32	335	1447
		93%	-2%	93%	94%
• Displaying knowledge in job (Q8e)	N=	98	-30	329	1429
		98%	+1%	96%	95%*
• Adequately answering questions (Q8f)	N=	99	-32	333	1440
		98%	+1%	96%	95%
• Understanding purpose for call (Q8g)	N=	99	-31	334	1448
		98%	-	96%	95%*
• Having authority to make decisions (Q8h)	N=	99	-22	320	1384
		88%	-6%	91%	92%
• Working quickly and efficiently (Q8i)	N=	98	-33	333	1437
		91%	-4%	93%	93%
• Satisfied request in one conversation (Q9b - % Yes)	N=	101	-28	335	1443
		53%	-20%*	67%*	71%*
• Performance vs. peer utilities (Q10c - % Better or Same)	N=	22	-6	69	339
		70%	-23%*	85%	83%

** Indicates a statistically significant change/difference from current month rating at 95% confidence level.*

Note: "Change" column represents the change of current month's ratings from previous month's ratings.

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Springfield Contact Center May Flash Report

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		Springfield Contact Center			
		May	Change	3-Month Avg.	12-Month Avg.
Phone Rep Performance					
	N=	201	-3	634	2930
• Overall performance (Q8a)	N=	107	+8	335	1672
		98%	+2%	97%	95%
• Being courteous and professional (Q8b)	N=	108	+8	337	1676
		99%	+2%	97%	97%
• Treating as respected customer (Q8c)	N=	107	+7	336	1678
		99%	+1%	97%	96%*
• Showing concern for situation (Q8d)	N=	106	+7	335	1663
		97%	+5%	95%	94%*
• Displaying knowledge in job (Q8e)	N=	105	+7	330	1643
		98%	-	98%	95%*
• Adequately answering questions (Q8f)	N=	107	+8	336	1658
		98%	-	98%	95%*
• Understanding purpose for call (Q8g)	N=	105	+6	333	1665
		98%	-	98%	95%*
• Having authority to make decisions (Q8h)	N=	101	+2	320	1596
		98%	+10%*	94%*	92%*
• Working quickly and efficiently (Q8i)	N=	106	+8	334	1655
		97%	+7%*	94%	93%*
• Satisfied request in one conversation (Q9b - % Yes)	N=	106	+5	335	1660
		84%	+31%*	70%*	72%*
• Performance vs. peer utilities (Q10c - % Better or Same)	N=	26	+4	76	392
		88%	+17%	86%	83%

* Indicates a statistically significant change/difference from current month rating at 95% confidence level.

Not2: "Change" column represents the change of current month's ratings from previous month's ratings.

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- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center June Flash Report 2005

		Springfield Contact Center			
		June	Change	3-Month Avg.	12-Month Avg.
N=		241	40	689	3171
<u>Phone Rep Performance</u>					
N=		146	39	374	1818
• Overall performance (Q8a)		93%	-4%	95%	95%
N=		147	39	378	1823
• Being courteous and professional (Q8b)		95%	-3%	96%	96%
N=		147	40	377	1825
• Treating as respected customer (Q8c)		95%	-3%	96%	96%
N=		147	41	375	1810
• Showing concern for situation (Q8d)		91%	-6%*	93%	93%
N=		143	38	369	1786
• Displaying knowledge in job (Q8e)		95%	-3%	97%	95%
N=		144	37	373	1802
• Adequately answering questions (Q8f)		95%	-3%	96%	95%
N=		146	41	373	1811
• Understanding purpose for call (Q8g)		93%	-5%*	96%	95%
N=		140	39	360	1736
• Having authority to make decisions (Q8h)		91%	-7%*	92%	92%
N=		147	41	374	1802
• Working quickly and efficiently (Q8i)		94%	-3%	94%	93%
N=		150	44	380	1810
• Satisfied request in one conversation (Q9b - % Yes)		76%	-8%	72%	72%
N=		33	7	86	425
• Performance vs. peer utilities (Q10c - % Better or Same)		75%	-12%	79%	83%

* Indicates a statistically significant change/difference from current month rating at 95% confidence level.
Note: "Change" column represents the change of current month's ratings from previous month's ratings. Except where otherwise noted, all percentages are the percent of customers giving a rating of 6 or higher on a ten-point scale.

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- Q5f -- Based only on those customers who completed their entire transaction through the automated phone system
- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility

Springfield Contact Center July Flash Report

		Springfield Contact Center			
		July	Change	3-Month Avg.	12-Month Avg.
		208	-33	697	2528
<u>Phone Rep Performance</u>					
	N=	130	-16	403	1474
• Overall performance (Q8a)		96%	+3%	95%	95%
	N=	129	-18	405	1475
• Being courteous and professional (Q8b)		98%	+2%	97%	96%
	N=	130	-17	405	1477
• Treating as respected customer (Q8c)		96%	+1%	96%	96%
	N=	128	-19	402	1470
• Showing concern for situation (Q8d)		96%	+5%	93%	93%
	N=	128	-15	395	1444
• Displaying knowledge in job (Q8e)		98%	+3%	97%	95%
	N=	127	-17	399	1459
• Adequately answering questions (Q8f)		95%	-	96%	95%
	N=	130	-16	402	1466
• Understanding purpose for call (Q8g)		97%	+4%	96%	95%
	N=	119	-21	380	1395
• Having authority to make decisions (Q8h)		94%	+3%	92%	92%
	N=	129	-18	403	1459
• Working quickly and efficiently (Q8i)		96%	+2%	94%	93%
	N=	122	-28	399	1462
• Satisfied request in one conversation (Q9b - % Yes)		79%	+4%	77%	72%*
	N=	32	-1	93	347
• Performance vs. peer utilities (Q10c - % Better or Same)		76%	+1%	79%	82%

* Indicates a statistically significant change/difference from current month rating at 95% confidence level.
Note: "Change" column represents the change of current month's ratings from previous month's ratings.
Except where otherwise noted, all percentages are the percent of customers giving a rating of 6 or higher on a ten-point scale.

About This Report

This report presents the monthly results of the customer satisfaction audits of recent service contacts for the seven NiSource operating companies. Unless otherwise stated, all percentages represent the percentage of customers who evaluated that particular aspect of their service experience a "6" or higher on a ten-point scale. Most results are based on the entire sample of customers surveyed noted above. However, the reader should be advised that the following questions are based on a smaller sample size and should be interpreted with caution:

- Q5f -- Based only on those customers who completed their entire transaction through the automated phone system
- Q10c -- Based only on those who have had recent experience contacting the phone center of a peer utility